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Shadows and Straws

FROM ENGLAND comes much food for thought. The Institute's Committee on Registration, for example, might perhaps have its attention directed to the recent statement of Lady Astor, as chronicled in current press reports. "No architect," says she, "ought to be permitted to build a family house until he has married and has had three children, and then he should first submit his plans to his wife." We are reminded, in this connection, of the lady who called on an architect and submitted a drawing of a bungalow she proposed to build. The space was laid out quite intelligently, and her opinion was that the need for an architect was more or less slight and that his compensation ought therefore to be considerably reduced.

The architect, noticing that the cellar stairs descended from the parlor, modestly inquired whether that was her expressed desire. "Well," she replied, "I don't see where else to put them."

EDUCATION, on the meaning of which there is so great divergence, is greatly to the fore among our English brethren. An interesting episode in the controversy relates to the theatrical performances of Shakespeare arranged by the London County Council for the benefit of elementary school children. The legality of the expenditure involved was challenged. As a result, the Lord Chief Justice has given the finding that the court "could not see that a theatre was a place of educational interest." This, says a critic, "hits the modern idea of education full in the face, and with no apology to follow." He likewise points out that while it is still legal to take the children to the Tower of London as an aid to the teaching of history, the ruling out of one art from school curricula may very properly be regarded as a precedent for the suppression of the rest. We are still badly in need of an understanding as to what an educated person is, it seems.

POSSIBLY some light has been shed by the report of the Committee appointed to inquire into the teaching of English in the land of its nativity. It has aroused the keenest interest, is widely commented upon, and seems to be esteemed as a very worthwhile statement on the subject. The report insists, says Mr. Clutton-Brock, the distinguished essayist, "upon two things so obvious that they have been forgotten—namely, that we are not educated at all unless we learn to use our own language, and that we do not learn to use it by nature; that is to say, by talking alone. . . . Croce has pointed out that the unit of language is not the word but the sentence; words have no real existence, no precise meaning, except in sentences, and because most of us at present cannot find the language for the thought our thought does not exist. We have a process which we call thought, but which consists in finding reasons for believing what we want to believe."

What a truism! The world blunders on by a process of rationalisation,—by cheating itself in both thought and language. "We must cheat ourselves in the process of thought," says Mr. Clutton-Brock, "and this we are able to do just because we allow our language to cheat us. . . . What is worse, we not only cheat ourselves but allow others to cheat us, because, having no command of language, we do not see that they are misusing it." In somewhat vulgar terms, but with beautiful precision, the process in America has been called "chewing the news-print cud."

YET IF CLUTTON-BROCK sheds light, we are at once plunged into fresh obscurity. Lord Robert Cecil, by many considered as the coming statesman of England, speaking recently on the subject of the workingman's education, said: "Broadly speaking, things have been managed by educated people. But there seems to be required something more than education for managing the affairs of a great country." This is a stinger, as one might say, for it is tantamount to a confession that our so-called educated people are quite impotent to prescribe or conduct a process of education. To be sure, Lord Robert added that "the acquisition of education was not real education. Education was only valuable if it taught people to think." But this leaves small food to gloat over. A civilization which has allowed propaganda to pass as thought, and to accept the

currency while lying down supinely,will have to shake itself roundly if it really wishes to make education the means of extricating us from the present condition of things. And nothing but education—not the old kind—will do the trick. No wonder that optimism is showing signs of fatigue.

FOLLOWING upon precedent now somewhat firmly established in this country—and perhaps elsewhere; we do not know—the Royal Institute of British Architects is considering the award of a medal for the "best street building" erected in London during the coming year. The press takes up the proposal and speculates on the fact that "while music, painting, sculpture, and literature have to face the full battery of criticism in the journals devoted to these subjects, architecture alone is secluded from all critical shocks. The impression the layman gets is that all buildings are equal in the sight of the editor." There is more than a modicum of truth in that statement. And yet, we wonder, what is the use of the flood of public criticism? What proportion of it is of the slightest value? What share of it is based upon real culture? And of what influence is it, in the final analysis. When art is alive, people talk about it. When it is dead, they write about it, using the poorest language we have in which to try to explain the better one we have forgotten—or lost.

YET THE TRAIL of business runs here as ever. The word language has been taken over, lock, stock, and barrel, as an accessory to the traffic of barter and sale. No word is sacred. No word meaning endures. All is distorted, magnified, superlatived, and crammed down our paralyzed gateways to the brain like wadding into a barrel. But nothing ever goes off. There are no explosions. It is just a stuffing process, and of that process, criticism pretends to occupy an exalted and useful share. Perhaps! But the power of appreciation is a personal matter. Beauty has a million messages. Few get all of them. Hardly a being who does not get some of them. How many have been helped to get more by reading what someone else believed to be the one and only true message revealed, or by reading why the one and only true message was not revealed? We think very few, for criticism has become a trade like the rest, and thrives not upon the instinct for creating things but by dissecting and often mangling beyond recovery, the creator in embryo. We speak here of public criticism only, as distinguished from the wise counsel extended by the master to the pupil. That's a different question. There we see art still alive, or in process of becoming alive through creation. In the other field—words, words, words—and what comes alive? Really alive to completeness?

IS THE REMEDY sought one of building up or of tearing away? Both, very likely. The tale of the "ivy green" seems *a propos*. For years its foliage has been reverenced as an adornment to architecture. The "ivy mantled" wall is almost as stock in language, as money in a bank. But Oxford, under wise guidance and somewhat goaded to the effort by a group of architects, has found that buildings dug out from under the ivy were much more beautiful than had been thought. Of course, in tearing down the insidious thing, whose tendrils will eventually bring down the stoutest wall, one has to be careful. Much ivy serves a very useful purpose. It had better be left to complete its work of destruction. But this merely serves to remind us that it is easier to tear down than to know what to tear down. And then, if we tore down all that was thought to be ugly, even though we took no more than a census among architects, there would not be so many buildings left! Most of our cities would disappear. What then? Should we repeat? Most people so affirm, which leaves life a desperate tragedy. Can we think in better terms? If so, we can change it all. Only that is impossible which cannot be imagined. Perhaps imagination—"creative thought"—is the key.

IMAGINATION! And yet! How far we still lag behind the dream out of which the shape emerges. How small the social impact of even the boldest or the loveliest of dreams. How untranslatable are so many of our desires, though the picture lures us on with feet unflagging, even straight to meet the shrapnel splinter or to breathe the lethal cloud. Man's thirst for beauty—his longing for truth, justice, call it what you will—outstrip, with ever flying feet, his blundering plodding pace. Well was it said by Lord Robert Cecil that we need a new sort of education, since it is the educated who have left us in the desert of business. Nature, ever alert with her checks and balances, has remained silent. Against business, which lives off the fruits of industry, no check has yet come. Education, instead of understanding business and the chaos into which it has plunged a large part of the world, still thinks of it as synonymous with industry. Yet the people who live by business multiply faster than those who live by productive work. Has education something to do with that?

MR. ARTHUR POUND'S exceedingly interesting articles on the sociological effect of the automatic tool, in recent issues of the *Atlantic* are of unusual significance. We quite agree that the ultimate result will be direr in its consequences than anything we have yet imagined as human punishment, unless men bestir themselves. But our whole educational machinery is at present so incapable of being of the slightest assistance that well may Mr. Pound give open vent to his fears. For our part, we would like to point out that in the building trades, where the automatic tool has made no such inroads upon hand work as in the automobile business, the same sociological effects are quite apparent. The

decline in numbers of workers—the breakdown, steady and deadly, in the quality of workmanship, are two vital questions which have been wholly overlooked in the pseudo-economic propaganda which has stultified our press and been echoed about by leading citizens. Mr. Pound sees the consequences of this clearly—and says so with brutal frankness—and we imagine that architects are beginning to glimpse it as they pursue the vanishing plasterer and the evanescent mason. Yes—we think that education has failed here quite as signally as elsewhere.

BUT FOR SHEER stupidity—for a failure so monstrous as to be barely short of criminal—whatever that means in non-legalistic verbiage—consider the case of a somewhat prominent "city planner" who was about to deliver, in one of our large cities, an address on "The American City of the Future." An hour or two before the event, it was suggested that some questions be prepared in order that they might be addressed to him at the close of the lecture. One of the questions written down was this: "What will be the effect on the American City of the Future of the private capitalization of site value of land, and inasmuch as this process has produced our present cities, how can we accomplish anything without a change in point of view?"

The lecturer confessed at once that he had never given this question any thought and that he would prefer not to have it asked. Now imagine an audience in Stockholm or Copenhagen or Rotterdam or Ulm or in any European city where city planning dreams have been accompanied with an economic analysis—imagine such an audience entertaining a lecturer who could not answer them such a question! He would be roundly hissed off the stage, as he would deserve. Yet in America our professional dreamers can pursue their plan of completely deceiving and misleading the inhabitants of our cities by making them believe that city planning can give them a cure for their ills without in any way disturbing the business method of producing cities. What abominable fraud! Has education failed here? Indeed, where has it succeeded in averting the social consequences of the individual lust for conquest? Can it succeed in that connection? With Mr. Pound, we hope that it can, but we think it will have to hurry up just a little, and that all of us will have to look not at the automatic tool but at the motive that controls it. We also, will have to seek the difference between business and the productive process—between the pyramiding of capital and the releasing and unshackling of public credit. Can education teach the difference between "industrialism" and business? Shall we be able, some day, to distinguish between the building business and the building industry? Will such eager searchers and thinkers as Mr. Pound go on, or will they stop off at the point beyond which editors do not commonly allow them to go?

THE NOBEL Prize in literature to Anatole France! It pleases a great deal, for in literature he stands quite alone. There have been others who combined many of his qualities, but none who combined quite all of them. If it is true, as report has it, that Thomas Hardy was at first thought to be destined for the honor, it may well be that architecture has lost a near chance. Hardy was an architect who went over to literature, for which we think the world may be most thankful. At times, as in "Under the Greenwood Tree" and the "Woodlanders," Hardy came close to the subtle humor of France—yet nothing of Hardy's ever approached "La Rotissérie de la Reine Pédauqe." Nor do "Life's Little Ironies" quite equal that collection of tales in "L'Etui de Nacre." And then, when Hardy sat himself down to do "The Dynasts," Anatole France poured out "Pierre Noziére," "Le Livre de mon Ami," "Le Petit Pierre"—those amazing bits of biography in which, through the lips of a child, he gives forth the ripened wisdom and philosophy of one who has touched life seemingly with such gentleness and yet with what vitality, what eager seeking, what patience, what calm, what penetrating gaze. In limpid phrase and exquisitely molded thought he lets the clear stream flow. He has his turbid moments as in "Les Dieux on Soif" or as in "Le Lys Rouge," but these, after all, are pools that soon settle, and we may always turn to the cycle of Monsieur Bergeret for instant delight. Hardy was much like him in clarity and limpidity, and perhaps the difference between them is that Hardy painted as he saw, leaving the reader to weave his own philosophy of cause and effect in the affairs of men, (Hardy has denied the charge of being fatalistic) while France interpreted in terms of philosophy, satire, ridicule, and humor, touching all things to that very quick where laughter and tears hang in the balance, laying all things bare, yet holding life sacred ever. To read and know Anatole France seems better than to have been graduated from any institutionalized educational process that we have yet evolved, though one would not wish to give up "Tess," or "The Mayor of Casterbridge," or "The Return of the Native," or "Far From the Madding Crowd." In all of these we guess the architect Hardy might have been. We feel to our very depths the rich pattern of his art—the delicate shadowy brush strokes tracing night winds on the heath—the spots of color in his hills, now noble, now tragic—the living design of road and field and tree, where joy and majesty and sorrow and pain took their everlasting way and found their everlasting rest. Indeed, in his hands, all nature became a crowd of living personalities with destined parts to play. Yet his men and women were never heroic. If architecture here lost, then literature as surely won. And even though Hardy had to give way, the trustees have at last given a literary honor and distinction to the Nobel prize. C. H. W.

Thatch—II

By CHARLES G. HARPER

IN the case of thatch-renewal, not often is the old covering stripped, but new is laid on the old; and the merest casual wayfarer may readily see with what thoroughness, or lack of it, the work has been performed; not only by the difference in colour, but by the varying thicknesses with which the roofs are covered. Here an attic window looks out immediately open-eyed upon the sunlight, there another peers forth, blinkingly, as from behind beetling eyebrows, from half a yard's depth of straw, shading off from a coal-black substratum to a coffee-coloured layer, and thence to the amber top-coating of the latest addition. Thus, when Thomas Hardy describes Bere Regis as a "blinking little place," he fits it with an exact epithet.

To come nearer to Dorchester, the older part of Piddletown is very largely thatched. It is not that part of this considerable village which you see in passing along the main road between Bere Regis and Dorchester, but the parallel street behind the church. Along the highway, Piddletown (the "Weatherbury" of the Wessex novels) was rebuilt some forty or more years ago, in a kind of rigid unsympathetic domestic Gothic, and in a cold limestone; so that this part of the place is not a little repellent. It is, in fact, an importation, house much older than the tablet inscribed "W. M. P. 1708," on its frontage would imply. It was restored probably at that date by one of the Mansell-Pleydells, owners of considerable properties in these parts.

CHIVELSTONE—A Rainy Day.

There is much thatch also at Shillingstone, a village anciently styled "Shilling-Okeford," near Blandford; and it is additionally interesting from its imposing and lofty maypole, rising to a hundred and ten feet, and dressed with garlands every spring. Not far distant, along the same valley of the Stour, is Sturminster Newton, often marked on maps "Sturminster Newton Castle." Although this galaxy of names is highly impressive, it should be said that there is neither minster nor castle here; nor, indeed, is it a "new town." Time long since abated anything new about it. Here is a heavily-thatched inn, the "White Hart," obviously a

In Dorchester town we do not expect to find thatch. The place was in the eighteenth century so rebuilt and made so modish that it is not in general to be looked

LYCH GATE—Long Compton.

for. But a walk into the byways of the town, along Glydepath Lane, will presently discover, in a fine damp situation close to the river, a tiny group of cottages heavily thatched. They are built of grouted flint and chalk-lump, faced here and there, and patched with red brick, and held together by iron ties, so that in this, their old age, they shall not some night altogether collapse. Prominent among these cottages, is that called "the Hangman's Cottage." Here, in former times, when the penal laws of England were altogether as savage as they are now lenient, Dorchester had its own hangman, in receipt of a regular salary.

Leaving Dorchester, there will be found beyond the south-eastern outskirts of the town the hamlet of Upper Bockhampton, and the birthplace there of Thomas Hardy, the novelist. Appropriately enough, it is a thatched cottage, and the back of it looks out immediately upon the very edge of the wild: those woodlands and healthy spaces which, with a fine freedom of choice, are variously called Bockhampton or Piddletown Heath, or Thorneycombe and Ilsington Woods. "Ilsington" is a place-name found over all the country, appearing sometimes, in a sort of literary aphasia, as "Islington."

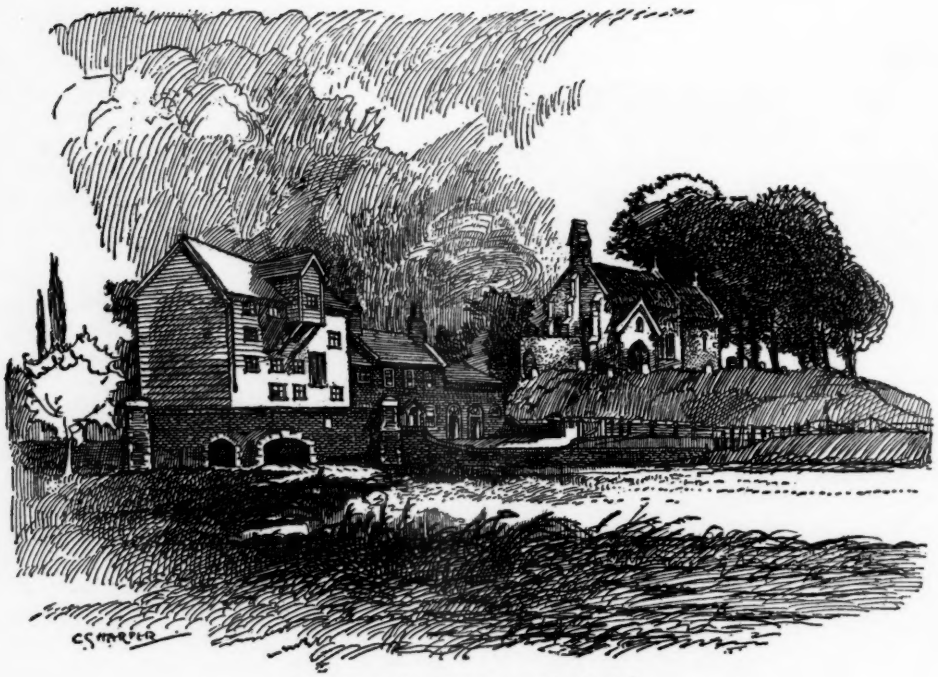
Bockhampton is on or near the verge of all those many-named heaths which Hardy merges together in his novel, "The Return of the Native," as "Egdon Heath." The heaths are untameable. They stretch forth and bid defiance to the best efforts of the cultivator; but down at the hamlet of Hurst, where water is plentiful, and the thirsty heath is subdued in an oasis of cultivation, there is an old red-brick farm of superior aspect, and yet with a thatched roof. Thatch, rightly or wrongly, generally has implied a more humble residential status than that of a manor-house type of residence, to which obviously this farm belongs, for the old gate-piers are still surmounted with stone globes, which the rustics, observant enough, perceive to be the signs of class-distinction. The country folk, therefore, style them "gentility balls."

Well, then; there stands the farmhouse, encircled by the glooming heath—a very fine mass, with a good effect of skyline. But there is, you cannot help feeling, a whimsical air about it. It is the thatch that evokes this feeling—an effect, oddly, such as might be produced by a gentleman wearing a harvester's hat. Such gentility, in the region of wild, uncanny Egdon, wears, as Mr. Hardy would express it, "an anomalous look."

There is probably more thatch in Dorset than in any other county. Away up in the remote valleys, where tourists rarely penetrate, past broken-down and decaying Cerne Abbas, that anæmic survival of a little town once dependent upon a great Abbey, to Alton Pancras; and again along the valley of the Stour and in Blackmore Vale, this ancient, natural roof-covering is plentiful. Some years ago, when it seemed that thatching was almost to die out as a trade, Lord Alington had the new post office at Witchampton, adjoining his seat of More Crichel, thatched, and very handsome it looks.

But scarcely in the Isle of Portland, that stony, wind-swept outer limb of Dorset, do we expect to find anything save very heavy roof-coverings, against tempests. Yet, in perhaps one of the most exposed positions there, at the village of Chesil, at the foot of the cliffs, and on the actual Chesil Beach itself, there stands an extraordinary dilapidated old cottage of strange contrasts. It is apparently of sixteenth-century date, built of enormous blocks of stone, in an obvious effort at extreme solidity; and yet it is thatched. Do you not remember those drawing-copies of old school days, after Harding and other romantic draughtsmen, which had for their subjects cottages of a picturesqueness that seemed almost impossible? You have never expected with confidence to behold the like of them in actual

OLD COTTAGE—Lustleigh, South Devon.



THATCHED CHURCH—Ingworth, Norfolk.

OLD COTTAGE ON THE BEACH—Chesil, Isle of Portland.

PAKEFIELD CHURCH.

existence. Yet here, only a few feet above high-water mark, is the realisation of those copies. There are not any other cottages on Portland of this quality, and this is in ruins.

I can point to other old thatched cottages facing the sea in Dorset: at West Bay, Bridport, and at Ringstead Bay, near Weymouth. But they are not quite of this romantic quality. There is, however, one almost as good at Penberth Cove, near Land's End in Cornwall—a county in which we do not seek for thatch with much chance of reward. But here, dramatically planted by a rugged shore, and sometimes with great boulders slung on to the thatch to keep it from being blown away by Atlantic gales, is this specimen. And, at the western end of Penzance town, in the suburbanised outskirt of Alverton, remains the Devonian—rather than Cornish-looking long, low cottage, now the "Alverton Dairy"—the house in which Edward Pellew, afterwards Admiral, and created Viscount Exmouth, spent his early years. It is thatched, and built partly of "cob." The building is not really quite so low as it appears to be in the illustration, for the reason that the road and pathway have been raised at some time subsequent to its building, some one hundred and sixty years ago.

Of course, thatch has ever been the farmer's line of least resistance. It forms an obvious use for much of his straw, alike in covering the roofs of his farmstead, his labourers' cottages, his ricks, and—often enough, in Hampshire, Dorset, and Devon—his garden walls. In the heaths around Wimborne and Woodyates there yet remain numerous old so-called "mud cottages" and garden walls, built of the peculiar clay and sandy soil of the locality, which would speedily be dissolved by the weather, were it not for the thatch. It is not quite the thorough-going "cob" of Devon; but the Devon saying of cob walls, "Give 'en a hat an' a good pair of butes, an' her'll last for ever," meaning by "hat" a good thatch; and by "boots" a good foundation and a few courses of masonry or brick, equally applies.

Thatched and weather-boarded barns are themselves things of an especial beauty in the rustic landscape: taking "beauty" in this connection to mean the appropriate use of native materials. No more charming scene, in the rustic way, is to be found in Wiltshire than that to be found at Coombe Bissett, on the main Exeter road between Salisbury and Blandford, where the little river Ebele crosses the highway, and an old black-boarded barn, at the outpost of a farmyard, stands with its feet actually in the water, the floor supported on those squat stone pillars which the farmers call "staddles," using them as a protection against rats.

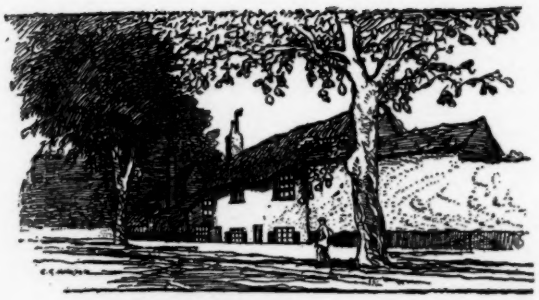
In the northern part of Wilts, on the Bath Road, immediately after passing that mysterious mound of a prehistoric age, Silbury Hill, you come to Beckhampton, a hamlet once busy enough, in the coaching way. There stands, at the fork of roads, where the several routes through Calne and Devizes part company, the stately "Beckhampton Inn," now become the home of a trainer of racehorses; and near by is the far older "Waggon and Horses" inn, the resort in those days of humbler folk. Ironically enough, while the stately inn has long since retired from business, the humbler house of refreshment still carries on. It is a stone and plastered house, with one of the most eloquent and thorough of thatched roofs that I know of. Some rugged old stones built against the front make it fairly obvious that the house was erected partly from spoil extracted from the neighbouring stone circle at Avebury. It is the "Waggon and Horses" that most closely realises of anything in the neighbourhood the description given by Dickens in Chapter XIV of the "Pickwick Papers," in the "Bagman's Story" of "the inn on Marlborough Downs." There can be no doubt that it is the house indicated, "a roadside inn on the right-hand side of the way, about a quarter of a mile from the end of the downs."

There is a spacious quality about the entire building which is so admirably in touch with the wide spaces of those downs and the mystic hill of Silbury, that "largest artificial mound in Europe," which you perceive indicated in the distance in the illustration, as to seem almost a touch of genius.

IXWORTH THORPE CHURCH.

HAYES BARTON—Birthplace of Sir Walter Raleigh.

BLANDFORD.



OLD HOUSE AT ELVERTON—Penzance.

A peculiar fashion in thatch is a very noticeable feature of the Porlock district of Somerset. It is a local "school," so to speak, in the phraseology of art. The outstanding feature of it is the quaintly peaked comb of the roof-ridge at the gable-ends: combs often preposterously exaggerated, as seen in the thatched roof of the lodge of Ashley Combe, on the way between Porlock Weir and Culbone, and, indeed, at Porlock Weir itself, that curiously old-world, amphibious, half-farming, half-seafaring place, where a raised beach forms the "weir" of a salt-water inlet, and where, on the road down to the sea from Porlock village the weirdly thatched cottages illustrated here are to be found, picturesque alike in their roof-coverings and their chimneys, fitted with wind-breakers. The pretty old "Ship" inn at Porlock is itself thatched, and has one of the odd cylindrical chimneys of this locality; but the thatch of the "Ship" is, exceptionally, not extravagantly combed, although the cottage opposite is.

The "Cat and Fiddle" wayside inn, at Hinton Admiral, in the generally suburbanised district around Bournemouth, is a survival of a simpler age, with a plain thatch, but thought a good deal of in that neighbourhood.

In Devonshire and Dorset the thatcher's employment was generally an itinerant one, concerned largely with the timely covering of the farmers' ricks against bad weather; and of late years almost exclusively in this branch of the art. Autumn is the thatcher's busy time in this difficult and highly technical art. Some years ago, when pursuing inquiries in South Devon on the subject of thatching, I found farmers were generally of opinion that if the County Council's Technical Instruction Committees would institute classes for instruction in the then obsolescent art of thatching, it would be a better work than some of the things they had done. A skilled thatcher could then (I speak of pre-war times) earn ten shillings a day, and there was much competition for his services. A square yard of thatch would then cost 4*s*. for labour. For thatching ricks in harvest-time the work was calculated at 6*d*. an acre; not, of course, the area to be covered, but the contents of the rick viewed *vis-à-vis* the field whence the corn had been reaped. An average rick contains ten acres of corn. In Devonshire, wheat-straw is generally sold for thatching in "nitches" (i. e., bundles of 28 lb.). The price used to be 1*s*. a niche.

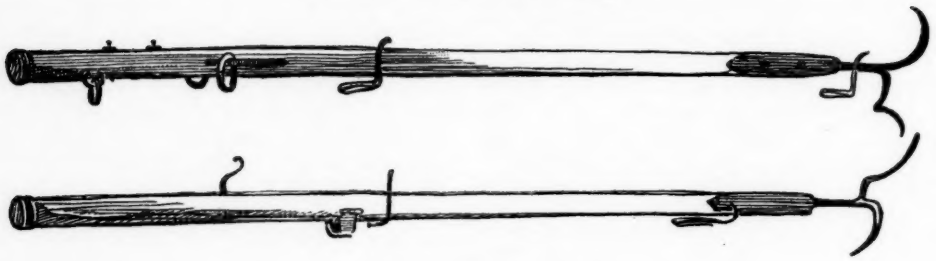
Just as there are local styles of building, so also there are differences in style and methods of thatching. The Hants and Dorset stick or gad, with which the thatch is transfixed and tied, is straight, with cord tied at one end and fastened in. Devonshire sticks, of hazel, are shaped in bent form, like a pair of sugar-tongs.

Cob and thatch are almost inseparable in South Devon. Together, they produce that "warm in winter, cool in summer" interior of which mention has already been made. Those cottages are cosy fortresses against the climate, whether it be winter's rigours, summer's blazing skies, or those moist "zoggy" days of warmth and soft rain so common in those parts, which I have endeavoured to picture in the illustration of Chivelstone. A charming example of Devonshire thatch is found at East Budleigh, at Hayes Barton, the birthplace of Sir Walter Raleigh, where he was born in 1552; traditionally in the room over the porch.

Porches are indeed a frequent item in Devon cottages. In that village of thatch, Lustleigh, in South Devon, there is an exceptionally charming old thatched cottage, with a granite-built porch, with simply but effectively chamfered archway. A curious, humble, and quite undistinguished cottage, but with a somewhat ornate thatch, is to be found in a remote situation on Dartmoor, near the hamlet of Hexworthy, seven miles north-west of Ashburton. It is called "Jolly Lane Cot," and stands on the Duchy lands. It has a quaint history; having been built by a rustic of that neighbourhood, for his father and mother, in one day; relying on the tradition that the encroachment of building upon common land could be maintained and the freehold claimed if a dwelling were built between sunrise and sunset and occupied and a fire burning on the hearth in that time. After seeking in vain for accommodation for the old people, this man waited an opportunity in June, when the farmers were all away at market, and, enlisting the

MARKBY CHURCH—Lincolnshire.

FIRE HOOK—St. Benet's, Cambridge.



FIRE HOOKS—Linton.

services of friends, built the cottage and installed his parents, with the fire burning, within the specified time. There was much talk of evicting them; but the matter was compromised by payment of a small quit-rent for cottage, paddock, and garden.

The fires that some seven years ago so greatly devastated the largely thatched villages of Chesterford, near Saffron Walden, and Melbourn, in Cambridgeshire, serve to show that, whatever may be said to the contrary by enthusiasts for thatched roofs, there remains that risk. The heavier premiums on fire insurance in respect of thatch recognise this danger. Thatch has indeed been in the past the source of much havoc, notably in the history of Blandford and Marlborough, to name but those two places. Directly to the great fires at Marlborough in 1553, 1679 and 1690 is due the rather striking architectural appearance of that town. Before those disasters it had been a town of the usual Wiltshire rustic village type. From its ashes it arose in a newer and more urban dignity, and so it remains exceptional. Most things in the town of Blandford date back to "the fire," which forms the great incident in the story of the place. Not that this was the only fire here. The town was several times burnt. In Camden's time it was destroyed, but was rebuilt; and the like happened again in 1677 and 1713. But the conflagration of 1731 was at once the last and the greatest. It began at a soap-boiler's. How this event impressed the people of Blandford we may yet readily learn from a pump under the churchyard wall in midst of the High Street. Incidentally, we may notice the exquisitely appropriate idea of making a pump the memorial of a fire. It stands in a kind of shrine, and bears this inscription recording that terrible happening:—

In Remembrance
Of God's dreadful visitation by Fire,
Which broke out on the 4th of June, 1731,
And in a few hours not only reduced the
Church, but almost the whole Town, to Ashes.
Wherein 14 Inhabitants perished
But also two adjacent Villages;
And
In grateful Acknowledgment of the
Divine Mercy,
That has since raised this Town
To its present flourishing and beautiful state;
and to prevent,
By a timely supply of water,
(With God's Blessing) the fatal
Consequences of Fire hereafter;
This Monument
Of that dire Disaster, and Provision
Against the like is humbly erected
By
John Bastard,
A Considerable Sharer
In the great Calamity,
1760.

As a result of the rebuilding, Blandford is a town of unusual stateliness among small English market towns. The work was done at the time when the classic idea prevailed. It matters little in the general effect if, indeed, the details are coarse and debased. The culminating dignity resides in the tall church tower, which, with the body of the church, is advanced beyond the general building line. It is, however, built of a stone with a rather unpleasant greenish tint.

To cope with the terrible dangers of burning thatch some curious olden devices were brought into use. These were the old "fire-hooks" or "thatch-anchors," as they were variously styled, which may yet be found here and there in rural England, relics of the past. They survive rather as curiosities than as practical engines for subduing fire. These were, in general, stout and extremely heavy oaken poles, from 20 feet to 40 feet in length, furnished with strong iron grappling-hooks. They were used for pulling off the entire roof-covering, and were formidable appliances, possible to be used only by the united efforts of several men, aided in the case of exceptionally large and heavy examples by horses. Such are the "thatch-anchors" preserved at Banwell, near Weston-super-Mare. These are 20 feet in length and are headed like the flukes of an anchor, with four iron rings at the head of the pole and two at the butt, intended for the passing through them of ropes, to enable a larger number of men to help. These Banwell "thatch-anchors" hung in one of the church aisles until 1812, and were then placed in the tower. In 1887 they were removed to a shed behind the fire station. They are fine examples, and are dated 1610, being thus perhaps the earliest in existence. Here is also a fire engine of the same date.

It seems at first strange how often the church was used as the place of storage for these old fire-hooks; but on reflection it will be obvious that the reason lay in the church being the only building long enough conveniently to house these cumbrous contrivances, which, if their efficiency was to be maintained, could scarcely be exposed to the weather. Now that they are never likely again to be used, they have been expelled. Thus, at Ivinghoe, in Buckinghamshire, the old fire-hooks, removed from the church, are to be found on the churchyard-wall, at the west end of the building, under a sort of pent-house roof. Others of this type are to be discovered at Ashford, Kent, in possession of the fire brigade; at Melbourn, Cambridgeshire; at Welwyn, Herts, on the wall of an old cottage in the churchyard; there are two which for long years have hung on the side wall of a house at Linton, Cambridgeshire, which until 1903 was the "Race Horse" inn. They are oddly pronged. The iron-ringed hook end of a very large and clumsy specimen is preserved in the ancient church of St. Benet, Cambridge. It was used last in the Market Hill fire of September 1849. A photograph on view in the church from an old etching displays the scene, with the fire-hook in action. Other hooks of the same kind are yet in the church of St. Bartholomew, Great Gransden, Huntingdonshire, and others at St. Ives and Long Stanton.

A fire-hook, formerly kept in the church of Burgh St. Peter, on the Waveney, in Norfolk, seems to have disappeared. That, as already mentioned, is a thatched church; but it is even more remarkable for its freak tower, chiefly of brick, in eccentric diminishing stages.

Fire was indeed an ever-present terror in the old days. An ancient fire-bell hung in the belfry of the west-country Abbey of Sherborne, in Dorset, is dated 1652, and bears the initials "J. W. T. C.," with the piteous rhyme:—

> Lord, quench this furious flame;
> Arise, run, help put out the same.

The choice of a rhyme by a versifier obviously very hard beset for one makes quaint reading, but the frantic state of the rustic mind in the presence of fire appears eloquently pictured in this singular couplet. There has always, of course, been abundant historic reason at Sherborne for dreading fire, a great conflagration having almost wholly destroyed the Abbey in 1437, while numerous later fires have devastated the picturesque little town. The bell itself is alike of unusual shape and of uncanny sound. The rim is incurved; producing, as no doubt was intended, a most distinctive and individual note.

Although we cannot declare that in olden times thatch was a more common roofing in any one part of England than another, yet it will be found that in Cambridgeshire and Huntingdonshire more exact measures were taken for dealing with thatched roofs in case of fire than are to be discovered elsewhere. What special means were adopted, if any, for pulling off burning roofs with fire-hooks in other regions does not appear, but in those parts it was the custom to build into the wall-plates under the eaves a series of iron rings. These are extremely interesting to the inquirer into old methods of fire-quelling. The rings, or "ringles," as the rustics name them, are to this day frequently to be seen under the eaves of old houses and cottages in and around Cambridge and Huntingdon. I have not observed them in other districts of England. They were provided for the purpose of affording a hold to the fire-hooks. They represented the maximum of efficiency, for, instead of laboriously seeking a grip upon the burning thatch, by this means the entire roof could be pulled off at once (and probably the careful critic may be allowed to add a great deal of the walling destroyed at the same time). These rings were to be noted, and may yet be, in some cases, at the "Lion," Petty Cury, the "Globe" inn, Newmarket Road, Stourbridge Chapel, the "Hoop" Hotel, Nos. 48 and 60 Bridge Street, 27 Trinity Street, 22 Sidney Street, 5 Benet Street, all in Cambridge, and the Master's Lodge, Peterhouse, which Cambridge men, ever irreverent, call "Pothouse" or "Pots," and ignorant outsiders "Peterhouse College." Other rings may be remarked at Trumpington and at Newmarket. They are not very noticeable by the casual wayfarer, being little larger than the rings on domestic curtain-poles, and, usually, very much overhung by the eaves, they inhabit a kind

BURGH ST. PETER CHURCH—Norfolk.

GALLOPS HOMESTEAD.

OVER WALLOP.

of continual twilight. Sometimes it is seen that a house is provided with several of these rings. For example, there are no fewer than five under the eaves of a house and shop at Linton, opposite where the old fire-hooks still hang. These features some years ago attracted the attention of another observer, who read a paper on the subject before the Cambridgeshire Antiquarian Society. It was reported in the "Cambridge Chronicle," in the statement that "Communications were made by Mr. G. Wherry upon 'The rings under the ears of old louses.' "

"Rings under the Eaves of Old Houses"; an antiquarian rather than an entomological title, was the true matter of the discourse. The misprint makes a choice companion with the famous "battle-scared veteran" and the almost equally famed "See the pale martyr with his shirt on fire," instead of "of fire." Lest I be suspected of telling a vain tale, I bid you, as Mr. Kipling says, "seek it in the files." There, in due course, the report will be found, under date February 28, 1908.

The revival of thatch, whatever the causes, partly artistic and in part economic, is to be welcomed by all who have at heart grace and beauty. Among the earliest of modern country houses to be designed for thatch was, I suppose, Gallops Homestead, the residence of Mr. S. F. Edge, near Ditchling, Sussex. It would seem to have been completed some twenty years ago.

COOMBE BISSETT.

Committee on Small Houses

EDWIN H. BROWN, *Chairman*

At the meeting of the Board of Directors of the American Institute of Architects at Indianapolis, 11 and 12 November, the Committee on Small Houses presented a report of progress. The Report was adopted by the Board together with the following resolutions:

That the President be authorized to appoint three Directors to represent the Institute on the Board of Directors of the Architects' Small House Service Bureau of the United States. (The President appointed Messrs. William Stanley Parker, of Boston; Charles H. Alden, of Seattle; and Charles A. Favrot, of New Orleans. Mr. Parker is the Secretary of the Institute and Messrs. Alden and Favrot are members of the Board of Directors.)

That the Institute approves the issuance of a mat service to the newspapers.

That the Secretary be requested to write to the Chapters of the Institute asking them to consider the formation of new Bureaus, and advising them of the approval of the Department of Commerce and the work of the Committee.

The following excerpts from the report of the Committee on Small Houses are presented as of interest to the membership generally:

1. One new division of the Bureau has been formed—the Mountain Division, with headquarters at Denver, Colorado, Mr. William E. Fisher, President; Mr. H. W. J. Edbrooke, Vice-President: Mr. T. Robert Wieger, Secretary and Mr. W. N. Bowman, Treasurer. This makes a total of two out of the thirteen ultimate divisions.

2. A policy for more rapid expansion of the membership in the Service Bureau has been adopted pending the actual formation of different divisions.

3. The endorsement of the American Institute of Architects and the Bureau idea by the Department of Commerce as given us by Mr. Hoover is felt by the committee to be one of the most important things that has happened in its history. It also puts upon the Bureau, to say nothing of the Board of Directors of the Institute, the necessity for making good on the program which they have announced and laid down.

4. That the Department of Commerce is serious in its offer of cooperation is shown by the fact that inquiries are coming to the Bureau office at Minneapolis which have been directed there from the Department. Further the Department, through Mr. John M. Gries, Chief of the Division of Building and Housing, conducted an afternoon session for the American Civic Federation at Chicago on November 15th, and the Chairman of the Small House Committee made an address there to put before the Convention the Service Bureau idea and what it can do for the country.

5. The Architects' Small House Service Bureau of the United States has begun a mat service for the newspapers, one paper in every city in the country, to spread the Bureau idea before the reading public. Several newspapers in different parts of the country have already contracted for this and it is hoped that the matter will spread more or less rapidly. The Service Bureau is already planning to get out a small service bulletin which will be issued every month and will be sent to those people who have purchased books of plans or made inquiries showing that they are really prospective clients.

7. The resolution adopted at the last convention in regard to the Service Bureau directed the Board of Directors of the American Institute of Architects to "follow the work of the Bureau in detail, and, at its discretion, to take such active part in the management and control of the Bureau as it may seem advisable." (The three Directors were appointed as has already been stated.)

8. The resolution adopted at the last Convention of the Institute, carried as its last clause, the recommendation that the Institute "suggest to its chapters that they take an active part in the formation of regional and branch bureaus, and do all in their power to make the work of the Bureau a complete success." Many individual architects have written the Bureau to know how they could take an interest in the work of the Bureau. These inquiries come from all parts of the United States.

Opposite is a reproduction of the first issue of the mat service as it appeared in the Minneapolis Sunday Journal. Although the service has barely begun it has already been taken by the following additional newspapers: Duluth (Minn.) News-Tribune, Providence (R. I.) Journal, Youngstown (Ohio) Vindicator, Syracuse (N. Y.) Post-Standard, Meriden (Conn.) Journal.

A plan service, slightly different in character, is also appearing in the following national magazines: The Woman's World; The Woman's Weekly, The National Builder.

EDWIN H. BROWN.

American Academy in Rome

PRIZES OF ROME IN ARCHITECTURE, SCULPTURE AND PAINTING ANNOUNCED

The American Academy in Rome announces its annual competitions for Fellowships in Architecture, Sculpture and Painting. Each Fellowship is for a term of three years with a stipend of $3,000 and opportunity for travel. Studio and residence at the Academy are provided free of charge. The competitions, which will be held in various institutions throughout the country and will probably begin in late March or early April, are open to all unmarried men, citizens of the United States. Entries will be received until March 1st. Any one interested should apply for application blank and circular of information to Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York City.

HELP FOR THE MAN WHO WANTS TO BUILD

HOW MUCH CAN YOU AFFORD TO PUT IN A HOME?

An easy and direct way of answering the question, "How expensive a home can I afford to build?" is to consider the rent you have been accustomed to paying as a basis for estimating the probable amount of money you can afford for a new home.

Budget experts say you are justified in paying from one-fourth to one-fifth of your income in rent. On this basis it is entirely probable you can afford to invest one-fourth, perhaps more, of your income in payments on a new home, for which you would some time have a warranty deed and complete ownership.

The percentage of your income which you are justified in putting into your home depends upon two things. First, the amount of your income; second, the amount which your experience proves you can consistently lay aside or save each month after deducting living expenses.

What Experts Say You Should Invest

Consider the rent you have been paying as a basis. Can you lay aside any more than the rent money for home payments each month? If so, how much?

Don't make the mistake of trying to finance a home too expensive for your pocketbook. You may encounter grief in making payments. Experts on home financing say you are justified in building a home for which you can complete payment in about 15 years. If you have saved one-fifth the value of your home, you should be able to pay the balance in about 12 years.

For example, a home costing $5,000, on which $1,000 has been paid down, should be paid for complete in 12 years. That is to say, the balance, $4,000, can be met in 144 equal monthly payments. To determine the monthly payments necessary to reduce the principal during this period, divide the balance, $4,000, by 144. This makes the monthly payment on the principal nearly $28 a month.

Why Not Pay Rent to Yourself

Figuring interest at 6 per cent, the first payment is $20. Add about $14 a month for insurance, taxes and upkeep and you have a total of $42 a month. Thus you can estimate for yourself whether a $5,000 home is too expensive for you to build or whether you can afford a larger dwelling.

Considering home building from a business investment point of view, it is easy to see that if the landlord makes money on the rent he charges you for the privilege of living in his house, you certainly should be able to make money on a home of your own, provided you erect your dwelling economically and from the point of view of safe investment and wise financing.

After you have decided how expensive a home you can afford to build, your next proposition is financing. This will be discussed in future articles to appear in this column.

DUTCH COLONIAL—MANY FEATURES

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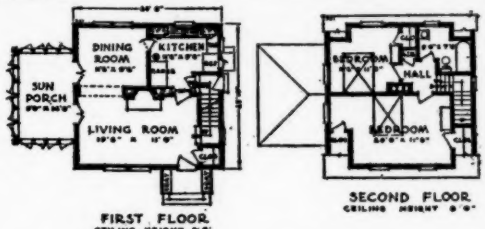

The roomy sun porch will prove a most practical and pleasing feature of this five room home. It is a 12-month-a-year porch. In summer the casement windows can be swung open to catch the breeze from three directions. In winter, if the porch has a south exposure, it will be warmed by the sun, even so, it is advisable to have the porch warmed by the heating plant. The sun room opens immediately into the living and dining rooms by means of glazed French doors, thus giving additional width to the house.

This home is a type which people invariably describe as homelike because it has such an inviting, comfortable atmosphere. Features that add charm to the exterior are the gambrel roof with wide dormers, front and back, and a handsome entrance doorway with two side benches.

This home is of frame construction with sided exterior, shingle roof, brick base and brick chimney. Stock sizes of lumber, millwork and standardized materials wherever possible are used. This eliminates waste in labor, materials and lowers building costs.

Study of the plan will show how impressively the living room, dining room and sun porch open up into what really is one big room. The living room has two features—the open stairway and fireplace. The fireplace, topped by a wide wood mantel shelf, is so located that one chimney serves fireplace, range and furnace.

The coat closet at the entrance serves as a convenient repository for wraps. The kitchen is planned to economize steps and to speed up housekeeping. Outside icing is provided. Bedrooms on the second floor offer cross ventilation and splendid closet space. A linen closet in the hall and painstaking planning of bathroom fixtures provide features sometimes overlooked in small homes.

As the house stands it contains 18,000 cubic feet and should be built for approximately $5,500. This cost will be increased by using elaborate or expensive finish. It can be decreased by using simple finish which will not affect the substantial construction. It is what might be called a $5,000 home.

WHATEVER YOU WANT TO KNOW ABOUT BUILDING

Questions addressed to this paper will be answered by the Architects Small House Service Bureau of the United States, approved by the American Institute of Architects, indorsed by the Department of Commerce, United States Government. Enclose self-addressed stamped envelope for reply.

Q—Please tell me how I can distinguish between various grades of flooring to be used in my new home.

A—Flooring is graded by expert inspectors and is usually classified in the grades that have been specified. If you have any doubt about the quality of material your contractor is supplying, we suggest that you consult with your lumber dealer, or better still, with your local architect. Very refined distinctions are made between some of the grades of flooring.

Q—What is the difference between "No. 1," "No. 2," "selected" and "clear" stock?

A—The differences are matters of quality. The distinctions are made on the basis of the number and extent of faults in the pieces and in the case of some, on the basis of color and grain figure. In any quantity of each classification, there are sure to be pieces which lie on the border line of two adjacent grades. Whether these pieces should be in the lower or upper grade, is a matter of individual judgment. If you are interested in the exact differences we refer you to the grading rules which have been published for each of the commercial woods. These may be obtained free from the National Lumbermen's Manufacturing Association.

Q—On the working drawings for my house I find that there is a device which is marked "louver opening." Please advise me as to what this is and the purpose of it.

A—A louver is a slatted opening employed usually for ventilation. It is commonly placed on the roof to insure ventilation of the attic space.

Q—Can I stucco my house in cold weather successfully or do you advise waiting until weather conditions are warmer?

A—It is not advisable to attempt to stucco in cold weather. The stucco sheet is very thin and does not hold heat long enough, even where the materials are heated before being mixed, so as to allow them to set before freezing takes place. In consequence, the completed work may be very inferior in quality. We strongly advise you to delay this operation until you have a continued period of warm weather.

Q—In a home we previously built we had difficulty with our fireplace draft. Will you be good enough to tell us how to construct a fireplace so it will not smoke and will you recommend a damper that can be used successfully?

A—The flue should be straight, of proper size and lined with flue tile. If it is not possible to build the flue straight, then there should be no reduction in cross sectional area where the bends occur. The fireface opening should not be more than one and one-half times the depth of the fireplace. Smoky fireplaces are sometimes improved by reducing the height of the opening through laying one or more courses of brick over the back hearth. A mechanical throat and damper placed as directed by the architect will insure you satisfaction. If the flue and fireplace are constructed as they should be. A number of good types of mechanical throats are on the market. The principle of each is to provide an opening for the smoke at the top of the fireface, which can be adjusted to conditions of the fire. The distinction between the various types lies generally in the method of operating the shutter which causes the size of the smoke aperture. We suggest that you select one which is simple and convenient in operation.

Q—Can you tell us why radiators knock?

A—There are a great many faults which may be responsible for this. The most common is faulty drainage of the steam system. If the pipes are pitched so that water cannot drain from them directly it may stand in pools through which the steam will be driven with explosive force. The contractor who installed your heating system should locate the source of trouble and adjust the system without expense to you.

A reproduction in miniature of one of the matrices distributed to newspapers by the Architects' Small House Service Bureau and described in the article on the opposite page. As Mr. Brown narrates, it is already being used by a number of newspapers scattered throughout the United States.

American Architecture in England

THE exhibit of the work of American architects now being held in London under the auspices of the Royal Institute of British Architects, to which reference was made in our last issue, gave occasion to a meeting late in November at which two addresses were delivered by Messrs Bertram G. Goodhue and Donn Barber. Sir Edwin Lutyens, R. A., presided at the meeting, and Mr. Goodhue spoke as follows:

Mr. Chairman, Ladies and Gentlemen—I would like at the outset to say that I am not a speaker. I love the practice of Architecture and, with all its difficulties, it is one of the most pleasant of lives, but talking about it is quite another matter. I am not at all used to doing it.

It is a very great honour to be asked to explain the purpose and tendencies of what we are trying to do in the United States, but I ask you who have looked over the drawings and photographs here if the task of explaining them is an easy one? You will bear with me if I do not succeed in making things clear. To tell the truth, things are not so very clear to me.

Here in England you have traditions, varying, to be sure, in various localities, but all very definite. In America there is scarcely anything of the sort. Here your climate has no great extremes, while with us Florida and Southern California are as different from New England—the Scotland of America—and from the North-Western States of Washington and Oregon as can well be imagined. Furthermore, we have a number of ethnic backgrounds to consider—Puritan New England, French Louisiana, Spanish California, and Florida. So, if you wonder at seeing such a stylistic jumble on the walls here, make more allowances for us than you would, or should, for yourselves. It is true, I think, that we use rather more styles than we are entitled to, but clients—especially lady clients, as Lady Astor hinted the other day—have very decided ideas; and woman is more powerful, more strongly entrenched in the United States than anywhere else, except, they tell me, in Burmah. So when a lady client, backed by her husband's wealth, comes into one's office and says she wants a Jacobean, a Georgian, an Italian, a French, or a Tudor house, we do what she tells us, only asking, in fear and trembling, about the path of the sun, the prevailing breezes, the general average of temperature, and such things, that really are more important than the style of the house.

It must be remembered that we American architects are divided into camps—very opposing camps, too. Mr. Barber here, my great friend and capital, though rather strenuous, travelling companion, is a graduate of the Ecole des Beaux-Arts in Paris, an institution with whose works some of us are not quite in sympathy—I for one.

Let me present myself with a little nosegay at this point. All my life I have upheld as staunchly as I could the British tradition, and shall contine to do so. It is a melancholy fact, and one that I wish could for ever be kept in the background of the future, that the British element, now forming, perhaps, half of our population, is constantly dwindling, and that the other and—am I right?—less desirable breeds are increasing by leaps and bounds; so that we British—and I am just as British as any of you—will in time lose our supremacy and even, with an unrestricted franchise, our rights. To me England will always be "this sceptred isle, this precious stone set in the silver sea," but there are others—some five million of them—who have no such sentimental allegiance, no such ancestral bond, to keep them straight.

Here are all sorts of conditions of buildings to look at—State Capitols, churches, schools and houses. I am sorry the plans are not here, too, because, with all my love and admiration for you, I do think that in practical planning we have set a pace—forgive me this—a little faster and a little better—in certain directions, at any rate. Take country houses, for instance. Why, in so many cases here, should the service between kitchen and dining room be made to cross the entrance or staircase hall? It is easy to be too practical, but why do you do this thing? And, too, it does seem to me that our Classic work is better than yours in that it is simpler, more direct and, as a rule, untroubled by pavilions, turrets, rustications and what not. There are exceptions on both sides of that statement. I wrote that rather hurriedly. As soon as my friend Mr. Barber gets up, he will probably tellyou that my knowledge of the Classic is of no consequence; that I am a Gothicist—which I strenuously deny—and that you must, therefore, discount whatever I may say about the Classic work. But take such magnificent things as Pope's Scottish Rite Temple in Washington, or McKim, Mead and White's New York Post Office. Take these two: are they not quieter, more in the "grand manner" than anything here in London? Is it fair to interrupt myself at this point and except the Cenotaph? I do dislike modern Classic architecture or any architecture where the style is provided by the detail. The "Orders"—or so I think—are now nothing but a veneer, and columns are the surest way of shutting light and air from the windows that come between. Have not we, all of us, everywhere come to regard architecture not as beautiful building, or, as my friend Professor Lethaby says, "building touched with emotion," but merely forms and details, foreign to the purpose of the building they are supposed to adorn and quite foreign to the characteristic and needs of those dwelling or working within?

The other day, landing at Cherbourg, our train ran past any number of the most charming buildings; some big, some little, all utterly devoid of Architecture with a capital "A." They were beautifully constructed of the stone of the neighborhood, with beautifully tiled roofs and beautifully shaped windows where such were needed, and that was all. Of course, the same thing is true of large sections of England, but it is *not* true of the things we architects are doing to-day in France, or England, or America, and this is largely due, I think, to our clients and their taste—their invariable good taste. I call you to witness that taste, good or bad, was a thing unknown until the Renaissance. But if you look carefully—(they are rather ineffective in an exhibition)—you will find some buildings of this right sort here, I trust. Take the Rogers' House at Southampton, Long Island, by Walker and

Gillette—a trifle more southern in character perhaps than its situation warrants, but surely most desirable to look at or to live in. There are lots of others, too, unfortunately not here. For instance, my friend Barber has a lovely little village community house up in Westminster county that I should have liked you to see—simple, homely and altogether charming, in which he forgot all about his Paris training.

There are not any very little houses in this exhibition, unfortunately, for all the world nowadays is working out its housing problem, and I am sure you would be interested in seeing what America has contributed to the solution. Unfortunately for us, there is too much wood in our country. Where you and the French are using permanent masonry, we use clap-boards—siding, I think you call it—or shingles, and, in certain parts of the country, patented materials, which certainly may be more durable than these but are rather dubious. I cannot name them for fear of libel suits, but everything that looks like heavy masonry, stuccoed or whitewashed, is not what it looks like by a long way. Even here, some pictures may deceive you. Our little houses are growing simpler and simpler; so, for that matter, are our big houses, but they are never quite so simple as on this side of the ocean. We have no peasantry in America. Everybody, no matter to what condition it has pleased God to call him, is everybody else's equal—and usually superior! The small cottager has to have a parlour as well as a dining-room, which is unfortunate for his pocket; but note this: he would rather have both of them in flimsy wood than a proper combination affair in more enduring material. Shingles, instead of slates or tiles, are the usual American roofing, and are due to the same causes; but we are slowly improving, or seem to be, and the little cottager has his bath that he does not any longer use to store fuel in. He used, in the tenements of the great cities at any rate, to cut out his plumbing to buy beer. Now, as you know, the Prohibitionists have changed all that, so he may as well let the pipes stay "put."

As for Gothic—I suppose I am expected to act as devil's advocate for this much-despised "style"—or let me call it rather principle of construction. While some of us are trying hard to succeed—(look at the work of my old partners, Cram and Ferguson, or that of Day and Klauder, for the most manful results)—we are really not "in it" with you. There are so many lovely Gothic churches in England that date not only from the fourteenth, fifteenth or sixteenth centuries, but from our own time, that on purely sordid and unworthy grounds I hope my possible clerical clients will never make pilgrimage to these modern churches of yours. Let me say that no modern, and but very few ancient, churches even approach the dignity and wonder and loveliness of the new Liverpool Cathedral. I have not seen it for a number of years, and cannot this time, for I am sailing on Wednesday from Southampton, but I am promising myself to bring my family over in the spring, and to land at Liverpool.

American architecture is better than it was. There is no doubt in practical matters we are vastly in advance of what used to be done when I first went to New York as a young draughtsman. The tendencies and purposes I have not dealt with, and cannot tell you much about. You can see them for yourselves. Some of us dream of a time to come when architecture, as we understand the word, will cease to exist, and when such ornament as is used will be as instinctive and inevitable as it used to be. This will mean, of course, a radical change in the world's civilisation, perhaps even in its government; but old as I am, I still cannot help believing that some day, somehow, the time will come when we shall have a style so ductile as to lend itself to all our extremes of climate and all our needs, from the tiniest cottage to the greatest public building.

Mr. Goodhue was followed by Mr. Barber who said:

The very subtle little paper which Mr. Goodhue has written in his inimitable manner may furnish food for discussion—I hope it will—but he has done what is usual with him: he knows a lot, but never commits himself. And so, if I ramble along in my own way, making blunders, it is only the difference between him and me: the difference between the nervous though careful artist and what we call the Captain of Industry. Fortunately, in America we are not divided into camps as he says we are. If we do not lover each other, we try to respect each other. And while, of course, in the profession of architecture we find the stumbling stones of jealousy and all the little things that come by way of interest and competition in the rush of progress, yet on the whole we get along pretty well. The fact that we are beginning to understand each other now, after twenty years of struggle with different ideas, and are coming closer together, augurs well for the future of our country in its architectural expression. I have been sitting here looking at these photographs and pictures and wondering if you who are here, and are thereby, I hope, evincing an interest in architecture, realise that we are a young country; whether you with your traditions realise that perhaps everything on these walls—which is only a small part of what we might show, because we are a voluminous people—dates probably no farther back than ten or, at the most, fifteen years. All the architecture in America—and what we call architecture is that which brings to our country the interest of study in that craft—really has been produced over a period of two generations. Up to fifty years ago we had a great deal of building in our country, but there were no monuments worthy of the name of architecture, except certain isolated buildings such as the City Hall in New York, which was designed by a foreigner; while Grace Church, Trinity Church, and other buildings which we looked upon as being worthy of the name of architecture, were also mostly designed by foreigners. Of course, we have our Colonial work, which started in the South at Jamestown with the early Pilgrims. It consisted of a scheme of very simple buildings built of bricks, a lot of them having been brought from this country. In New England there is the Colony of Salem, where we have wooden architecture based on what was then the *Louis Seize* in wood; and there is the so-called Georgian architecture. Our cities were jumbles of cast-iron fronts, which were cheaper to cast than to make in stone, and, as used in New York and many of our other cities, very unlovely. The Century Exhibition in 1876 in Philadelphia, the first industrial exhibition we had in our country, was merely a collection of sheds made to cover the mechanical and other exhibits of the products of the material side of our country. In 1893, when the World's Fair came round,

it was through the genius of men like McKim, Burnham and Hunt that we decided to do something to impress the people; something large and simple; so that for the first time we had what Mr. Goodhue would say was foolish: our *Beaux-Arts* plan, our *Cour d'Honneur*. Perhaps some of you remember many of those interesting buildings. At any rate, that exhibition was visited by Americans generally. As it was in the centre of the country, at Chicago, those who lived East and West, North and South all came; and the American, for the first time, carried back to his own home a feeling of something architectural. I think it was a very wise proceeding that these men should have produced a classic *ensemble*. We in our country at that time, you must remember, were not familiar, either through books or cheap prints, as we are to-day with architectural details and examples. Most of the people knew nothing about columns in architecture, or size, scale or schemes. Therefore they took back with them from the exhibition something of the dream city; some inspiration perhaps which became reflected in the awakening desires of the public. From that time things began to change. We had a further exhibition in Buffalo some years later, also more or less classic, but a little more free in the scheme of design, into which colour was introduced, thereby making another object lesson. Then in California there was an exhibition at San Francisco, where the combination of the climate, the verdure of the city, and the wonderful situation on the water made it the great Exhibition of America.

Consider the changes that have taken place during the life of one man (I am thinking of the late Mr. George B. Post—whom I feel honoured to count one of my friends, and whom I looked up to tremendously as a younger man). He began the practice of architecture when there was nothing higher than a three-storey house, when plumbing was practically unheard of, and when there was no central heating, and he lived to see, and to build himself, some very high buildings. He saw in his lifetime of over a period of fifty years of practice this tremendous growth from nothing to what might be called everything in the way of architectural effort. Of course, when Mr. Hunt began to practise, having come back from the Ecole des Beaux-Arts practically the first trained architect, he brought with him the traditions and the things that he loved most in the châteaux of the Loire and in French architecture, and he began doing real monuments in America. But Mr. Hunt's work, outside the enthusiasm he brought to it and the friends he made and students that he interested in it, did not stand for much in a constructive way; no more, perhaps, to use an extreme example, than Garnier, with his Opera House at Paris, or Michael Angelo with his personal work, or Raphael. Owing to the influence of Mr. Hunt, a great many younger men began to go to Paris to learn something of architecture. We had no Schools of Architecture in our country, but certain architectural courses in Universities which were very fragmentary, very elementary, and very stupid. When these pilgrims to the Ecole des Beaux-Arts came back they arrived in great numbers. They began, of course, to do so-called French architecture; they were young and enthusiastic, and they imported into America illogical and stupid forms which they had come to love during their dreams abroad. And so we had a sort of influx of the French millinery art. For every building designed by an architect there were hundreds designed by contractors. French books came into the libraries, and forms were copied without any sense or knowledge of their reason, and we got a tremendous taste—I may say a very bad taste—for very stupid work, and I think it was that to which Mr. Goodhue referred—and quite rightly. But these men came back with a certain knowledge of the theory and essentials of planning which I think has done more than anything else to solve the difficulties of the growing building industry of America. And, therefore, I am proud of being a Beaux-Arts man, just as I am of being a friend of Mr. Goodhue. I do not see why the one should preclude me from the other.

In our city architecture the streets are all built on the gridiron plan. Our forefathers had no imagination, and so we have avenues going North and South and little streets going East and West. The lots were divided into 25-foot lengths of frontage, and therefore our street architecture, particularly in regard to our business buildings, was really the architecture of the façade, the side walls and the backs being neglected. That of course spoilt the appearance of our buildings.

I understand that you are now beginning to think something of sky-scrapers in London. Sky-scrapers are high buildings which had an American reason in New York, and certainly a New York reason. The reason was this: that in the Southern part of the city, which was the business centre and the part in which was situated the Stock Exchange and banking locality, property was in very small freeholds, held at very high prices. Someone conceived the idea of building very high buildings on the very small lots, and with the advent of steel for supporting members of our buildings these skyscrapers began to grow. Of course they grew so rapidly that, to use an architectural expression, these things seemed to lie behind. The sky-scraper began to be known as an American invention. It has no place anywhere else, and it really has no place to-day in America. Since that time, during the last twenty years, we have developed our transit facilities to such an extent that we no longer have to huddle together. However, these buildings were growing up like a field of asparagus plants, vieing with each other, cutting out light and air, and making the lower storeys near the streets practically uninhabitable. So something had to be done.

I am now coming to a point at which I may be able to offer a suggestion that may be worth your thought. Something had to be done in New York, and so a Zoning Law was passed a year or two ago which was the result of very careful study. We had to face the condition of existing things; we could not make such a law retroactive; we could not tear down the sky-scrapers already built. Some scheme had to be devised to let them remain, but at the same time control those that should come after. So a scheme was devised to preserve the light and air in the street, and the city was divided into zones. The height of the buildings already existing in the lower part of the city which was given over entirely to business buildings governed the zone in the district, which was known as the "two-and-a-half district." This meant that in that particular district you could build vertically on the street line of your building two and a half times the width of the street in which the building was to be erected. From that

point you go a step back; one in three, or back within a plane which starts from the middle of the street, touches the limit of height to which you can go and then recedes. That pushes the higher portions of the building back on the lot, and if the lots are large the mass of the construction is in the middle. This has already begun to show that instead of damaging the plan of the building, instead of dwarfing the imaginations of the designers, it is bringing forward schemes of towers and turrets, and for the first time we are getting our towers and turrets treated on all four sides. The Woolworth Building, which, of course, is our great pride and which is perhaps the most extraordinary building in the world, is a different problem. The Woolworth Building is a block by itself; its turret tower is on the Broadway side, and being quite isolated, it can stand by itself. So can buildings such as the building of the Bankers' Trust, the Singer Building, and other buildings on smaller lots. Something had to be done, and what has been done has been a very good lesson. So that if you are thinking of sky-scrapers in London, before you build any why do not you take our Zoning Law and look it over, and then dilute it by at least 100 per cent.? Then arrange, as you can here, that you are going to start to keep your towers far apart, large at the base, and let them go up as high as they like. There is a certain advantage in a high building. The elevator made these high buildings possible, and without the present traction elevator, we could not have buildings such as the Singer Building, the Metropolitan or the Woolworth Buildings. The advantage of a sky-scraper is that your elevator shafts become very good corridors, and you can travel at the rate of 500 feet a minute instead of walking at the rate of two miles an hour horizontally. So far as hotels are concerned, there is no question but that a reasonably high building is more economical. It enables service to be brought more direct and makes the whole thing a more practicable affair. But in our hotel districts, and in those zones in which private property is situated, we have what we call the one-and-a-half times district. As our streets are mostly 60 feet or 75 feet wide, that gives us practically a maximum of twelve storeys, or at most fourteen, in some of the wider streets; which is not a high building with us, and is not a high building anywhere if properly planned and erected.

One other word I want to say about American architecture is that I think it is extraordinary for you to be interested in it. I feel that the men over there are working hard, and I think that perhaps the most interesting thing that has developed is what we have come to see as a consensus of opinion on the matter of scale. Scale, of course, is very important in architecture, and I was struck, here and in France, with the scale of things. By scale I mean the relation and size of the parts of the building to the people who use it. Those little houses at Cherbourg, to which Mr. Goodhue referred, at once impressed me with their charm; they seemed cosy and caressing to the occupants who were in them. We had in America a period of doing things too big. Twenty years ago everyone was doing things in a large way and on a big scale; trying to make their work impressive, to make the money of their client count as well as his position in the world. And then suddenly we all began to realise that there ought to be some connection between all these things; some reason for them. And with all that came the study of steel for structures, and finally through the engineer and from economical reasons we have found that the best spacing for steel is somewhere between sixteen and twenty feet columns on the average, and that our storey heights should run somewhere between ten and twelve and not over fourteen feet. All our high buildings are divided into sections, and with a minimum sized window, say four feet by seven, coupled with bays, you get a sort of gridiron arrangement which immediately determines the scale of your openings and of your wall surface and of the applied columns that Mr. Goodhue says are useless. That has done more, I think, to invite the expression of our architecture than anything else. One of the most marvellous things is the foresight of Charles McKim, who thought out in his very wonderful mind the fact that perhaps Italian Renaissance in architecture was more adaptable to use in our building areas than any other architecture. Therefore he brought frankly Italian monuments into our country; he made no bones about it, or excuses; he simply copied and adapted well-known types of buildings and placed them in the city which was fortunate enough to employ him as object lessons of monumentality. And so he changed the scale of things. When University Club was built on Fifth Avenue with the old three-storey houses and churches round it, it looked very large and simple and heavy. But since the University Club and the Forum Building near it and the apartment house have become absorbed in the surrounding architecture of modern New York, they take their place and hold their own, and so Mr. McKim was all we believe and what we now know him to be.

There is one more thing I should like to say, and that is that when all the stress and confusion of war has died away we are going to get one benefit to architecture, and that is from the pilgrimage of our American troops to this country and Europe. I find in my own office that the young men who came under me have an extraordinary love for architecture and art and the loveliness of Europe which they have got on their trip over here. You will remember we sent some two million men over, and they were taken from every class of life: some were Americans, some of foreign descent. They all came over and saw the destruction of things, which, apart from the horror of the destruction, seemed to them to be cruel in the sense of a destruction of beauty. They brought back with them inspiration for the fine things which we are beginning to see coming out in the sentiment of our country. As these young men grow up and have their own homes and use their own buildings, they are going to try and get something of that tradition and charm which you have over here, which we envy, and which we come over as often as we can to see.

The Professor Proves That There Was No Housing Emergency

Figures never lie! So I thought until I read the large collection of statistics brought together by a learned professor to prove that the emergency rent legislation was unjustified because there had been no shortage of housing in New York in 1920. There are so many figures and he is so very wise that you must believe him unless—unless you

have lived in New York and actually witnessed the suffering that has resulted from the lack of sufficient decent homes. The professor's tale seems like telling a boy back from the trenches that you have calculated it out with care and precision and there has been no war. Samuel McCune Lindsay, Professor of Social Legislation at Columbia University says, "No physical shortage of housing existed in 1920 according to the accustomed standards." All I can answer is—I was there!

Apartment Figures

Professor Lindsay arrives at his surprising conclusions on the basis of figures which show that the increased population 1910–1920 was less than the increased space in apartments (calculated at 4 persons per apartment). He does not consider the fact that an apartment's usefulness is not permanent. In 1900 most of the apartments were antiquated according to standards fixed at that time. In 1909 there were still 645,403 apartments in old law tenements (those erected before 1900) of a total of 840,101 apartments in all. Battleships are destroyed when they are obsolete. Apartments remain even after they are antiquated—even after their existence becomes a real danger. Over half the apartments in use at present in New York were built more than 20 years ago. Most of these are far below the standard set by the present law for new apartments. The Municipality has not destroyed them and replaced them—as has been done in London with certain of the old slums. Owners have not rebuilt them. As long as they could get a small return from their tenements, they have been unwilling to make the investment that would have been necessary to replace them with new dwellings. But the older and worst houses in the past were left vacant.

Vacancy Figures

After all the vacancy figures tell the tale. There were 67,847 vacant apartments in 1909; there were 53,541 in 1916, and in 1921 there were only 1,510 vacancies out of a total of almost a million apartments in New York tenements. Professor Lindsay's statistical tables show that the number of apartments increased so much quicker than did the population between 1910 and 1920 that there should have been an excess of 90,415 persons provided for. Yet we find some 66,000 more apartments in use in 1919 than in 1909.

Rent Figures

However, we do not need figures to prove to us that there was an insufficiency of dwelling places. Rents were going up in 1919—that is the best housing barometer. Landlords' expenses were increased it is true—but if there had been houses enough and to spare—it is the landlord who would have suffered and not the tenant. In the past when New York has been overbuilt, owners have received an insufficient return. This was perhaps unjust, but they could not change this condition. They could not increase their rentals—there were too many vacancies. When all landlords begin to increase their rents all the statistics in the world will not make us believe that there are more than enough apartments.

Pay Figures

But the Professor argues that the workman was receiving big pay—he was expanding, he was moving into larger quarters. If that is so, who was being pushed down into the abominable hovels that had been vacant? There were 39,166 vacancies in old law houses in 1916—and in 1921 there were only 915. These are the outstanding figures. If the workingman had gone up the ladder (which is doubtful) some one else had gone down. Who was it! The evil conditions of our slums have existed for a long time, but it was a more articulate class that was being made to suffer.

Prof. Lindsay apparently fears that his statistics may not prove a sufficiency of homes in 1920, for he says: "Some overcrowding, undesirable as it may be while it lasts, does not necessarily create a danger to public health and morals and constitutes an emergency justifying drastic use of the police power." But why Prof. Lindsay wishes to prove that which we have seen does not exist? I do not know. But I do know that the real estate men who wish to break down the rent legislation are making much use of his book.

Professor Lindsay's conclusions are that no physical shortage of housing existed in 1920 according to accustomed standards, and that if rentals had been permitted to increase, building would have been stimulated. But has the Professor considered what would have happened if building or housing on a large scale had started without governmental intervention of any kind? Building costs were out of proportion to general costs for reasons that we need not go into (the Lockwood Committee has)—building materials had risen 224% between 1913 and 1920 whereas all materials had only gone up 141%. If building had been stimulated sufficiently to decrease rents, the results would have been disastrous to builders—would have meant bankruptcy and foreclosures. Until this time rentals in old as well as new apartments would have rocketed up to the point where they would have been unbearable to much of the population. There was no chance to build in the old competitive way. Meanwhile the tenant had to be protected. Professor Lindsay quotes the City Club as saying, "Indeed there seems to be little hope at any time of private capital unaided supplying decent housing to the average workman at a rate he can afford to pay." It certainly could not be done in 1920. Foreign governments saw this—but as long as our government was unwilling to accept a constructive housing policy, it was forced to the only other available means of protecting the tenant—rent restriction.

CLARENCE S. STEIN.

NOTE: According to the New York World's version of the hearing before the Lockwood Committee on 5 January, Professor Lindsay admitted having "received $500 from the Real Estate Board of New York City for preparing a treatise on the housing situation which the Board has submitted to the United States Supreme Court in its effort to upset the existing rent laws, and which the Board (until the hearing) had expected to circulate broadcast as an 'impartial' survey tending to show that there never has been a genuine emergency in the housing situation here (New York City)."—*Editor.*

Community Planning and Housing

CLARENCE S. STEIN, *Associate Editor*

Milwaukee Squarely Faces the Housing Problem

The First Copartnership Housing Venture in the United States

How shall the city or state help meet the housing emergency in a constructive way? New York has answered by offering a bonus in the form of ten years tax exemption on buildings put under way before April 1922. As a result we have increased construction—but mostly of buildings of as poor a standard as the existing laws will permit. The city is helping to pay the bill, through non-collection of taxes, but it is demanding nothing from the builder, neither better-planned buildings nor easier terms for the tenant. Milwaukee is also participating in housing, but more directly and in a manner that will eliminate speculative profit and in which the participation of the city should not be a burden on tax payers—for the tax-exemption granted on new houses in New York City means that heavier tax burdens fall on the rest.

The Milwaukee plan is a direct outgrowth of the [1]1918 Report of The Housing Committee of that city. We believe that it more clearly and truthfully stated the essentials of the problem that was puzzling most of the communities of the country than has any other report published in this country when it said:

"The solution of the Housing problem involves—

(*a*) The elimination of speculative land values in some residential districts.

(*b*) Zoning of the city to safeguard all residential districts.

(*c*) Economical and adequate planning of streets, transportation, sewage, disposal, water supply, lighting, planting of trees, etc.

(*d*) Elimination of waste in construction of homes.

(*e*) Acquiring for wage earners the benefits of ownership without interfering with labor mobility.

(*f*) Legislation aiming to stimulate the erection of wage-earners' homes.

(*g*) Public instruction as to the possibilities of housing betterment."

The practical outcome of the report was described by William H. Schuchardt, F. A. I. A., the then Chairman of the Commission, and now President of the Public Land Commission of the City of Milwaukee, in a recent address from which we quote:

"In the Spring of 1919 the Mayor of Milwaukee, the Health Commissioner, the Building Inspector and members of the Commission appeared before the legislature and successfully urged the passage of a bill empowering municipalities and counties to purchase stock in co-partnership housing enterprises. Then followed a campaign of persuasion for the scheme was often times termed stupid, paternalistic, socialistic, or communistic. It was opposed by many of our leading manufacturers, by the real estate board and by other so-called practical, hard headed business people. The men who sponsored the scheme or who approved of it were condemned as being visionary, mere impractical dreamers. They had no precedent in this country to point to and European experiences were easily discounted because conditions on the other side of the Atlantic are too dissimilar to those which obtain in this country. But little by little the circle of friends increased. The opposition grew less insistent and last spring it was deemed possible to organize the Garden Homes Corporation. The City of Milwaukee, by vote of the Common Council, purchased $50,000.00 worth of stock, the County of Milwaukee purchased a block of $50,000.00 of stock and various manufacturers have so far subscribed to about $80,000.00 worth of stock. The Association of Commerce has gone on record as approving the scheme and has pledged itself to raise $350,000.00 more to invest in the enterprise.

"All sails are now set. About thirty acres of splendid land were purchased, architects were employed to draw plans of houses, the city planning board and city engineer designed the street layout and in September last some two or three hundred people witnessed the turning of the first spadefull of sod by Mayor Hoan. Some fifty houses are now under construction and more will be erected as soon as sufficient funds are in hand.

"The co-partnership scheme of ownership was developed in England some twenty years ago and has met with considerable success. It is designed primarily to mitigate the burdens of ownership and at the same time secure for the occupant practically all of the advantages of individual ownership. It aims to do away with all speculative values and as you will see, to make the wageearner's investment both safe and liquid.

"Let me cite a concrete example: We are assured that we can build a six room house for about $3,800.00 and we know that the land, a 40 x 100 foot lot will cost with street, sewer and water improvements another $700.00, making a total investment of $4,500.00. The prospective occupant subscribes for $4,500.00 worth of common stock and pays in cash as a first installment, let us say $400.00. His charges will then be as follows:

Taxes $30 per thousand	$132.00
Fire insurance	5.00
Repair charge	60.00
Contingent fund	20.00
Administration fund	20.00
Life and disability insurance	30.00
or $22.25 per month, a total of	$267.00
5% on $4,100.00	205.00
Payment toward stock	120.00
	$592.00

"His first year's total charges will therefore be $49.33 per month, of which $27.08 is investment and interest. At the beginning of the eleventh year he will have paid toward his stock subscription $1,600.00 and his charges would be as follows:

[1] See the JOURNAL for February, 1919.

Taxes and other expenses	$267.00
Payment toward stock	120.00
5% interest on $2,900.00	145.00
a total of	$532.00

or $44.33 per month, of which $22.08 is investment and interest. At the beginning of the sixteenth year he will have paid in $2,200.00 toward his stock and the total charges will be $452.00 for the year or $37.50 per month and so on until all his stock is paid for when as before stated his monthly charge is only $22.25.

"While these charges may seem high for the first years it must be seen that there are no items other than contingent fund and administration charges which the occupant would escape as an individual owner. These two items costing a trifle over $3.00 per month assure him against serious loss should he find it necessary to move to another locality. For in that event he does not need to sell out at a sacrifice in a buyer's market. Should circumstances require his separation from the company he merely sells to the company his stock at a surrender value which varies with the length of occupancy as does the cash surrender value of a life insurance policy. The company in turn sells this stock to another prospective occupant.

"It must also be borne in mind that his investment of $4,500.00 gives him a home which he could not possibly buy at such a price elsewhere for no profit whatever is charged in arriving at that figure. Yet it must be admitted that a monthly outlay of $50.00 a month, whatever it may include, is beyond the reach of the unskilled laborer. We can not here discuss that phase of the problem. We must for the moment accept what appears to be inevitable, namely, that the unskilled laborer can not buy a home equipped with all the improvements required by ordinance or by standards of living which certainly are an improvement on those of our forebears.

"The question has often been asked why the occupant does not receive title to the property he occupies when he has paid for all his stock. I wish to emphasize that he does not purchase property, but common stock. It is not the purpose of the company to procure homes at rock bottom prices, sell them at cost to the occupant and then permit him to profit in a sale to another wage earner. The company, in its effort to eliminate all speculative profits must control the title to land and buildings. The so-called unearned increment of land value shall benefit no individual unless the stockholders are ready to disband and sell the entire estate when all will share and share alike in proportion to their actual holdings. The company aims to protect its occupants against exploitation and it can not sanction or make possible their exploitation of others.

"In the matter of control it is proposed that a committee of occupants, elected by the common stockholders will determine on the fitness of applicants to become members of the community, or on the fitness of occupants to remain such. Such a committee may perhaps be empowered to recommend to the directors as to the degree of leniency to be shown a delinquent or make suggestions of all kinds for the betterment of living conditions. It is the aim of the company that restrictions shall interfere as little as possible with individual freedom. They will be imposed only where it is necessary to protect the common good so that the benefits to be derived will not be offset by annoying interference. In as much as the common stockholders, that is the occupants, will gradually supersede the preferred stockholders in control, because the preferred stock is retired as the subscribed for common stock is paid for, it is to their own interest to so guard their common possession that the advantages gained may not be lost.

"It has been predicted that it will be difficult to find a sufficient number of families who can be induced to subscribe to common stock under a scheme such as has been outlined. We are more optimistic than to believe that, for the idea has been well advertised and although we can now build only about fifty houses we have received over five hundred applications to date. I think that our embarrassment will lie in the selction of occupants rather than having empty houses on our hands."

Letters to the Editor

Misled—By What?

SIR:

In "The Labor Situation and the Landis Building Trade Agreements" in the November JOURNAL, Mr. Holsman covers the main points in the arbitration proceedings before Judge Landis and the judicial point of view with reference thereto. But he also, in parenthetical observations, presents his own opinion which I think coincides with the run of current opinion with respect to the labor situation and what had best be done about it. I refer here to opinion outside the ranks of trade unionism, of course.

This proceeding in arbitration before Judge Landis was, I gather from the various reports of it, an examination into the practices of trade unions in the building trades. It may have set out to amount to more than this; but the nature of the proceeding and the conclusions arrived at certainly justify the remark that it was so limited. Apparently it was assumed that what makes for the present labor situation could be discovered by scrutinizing the acts of trade unionists.

And it seems safe enough to say that the point of departure from which the inquiry proceeded was a certain point of view which underlies all of Mr. Holsman's observations and which is epitomized in his remark: "Union laborers have been misled into the belief that little production and much waste, coupled with enforced monopoly and high wages would somehow inure to their advantage."

In view of the evidence contained in trade union rules and the consequent action by trade unionists there appears to be good grounds for assuming that trade unionists have been actuated by such a belief. But that trade unionists have been actuated by such a belief does not account for the rise of trade unionism; nor does it cover the question as to why they act as they do. To attempt here to account for the rise of trade unions and the strategy employed by them would take us a little afield of the point of our immediate interest.

For the point of immediate interest is how to answer to a question which follows upon the heels of the assertion that trade unionists have been "misled." If they have been misled—what has misled them?

Now, it may be that the curtailment of output, price fixing and a friendly regard for monopolistic advantage are

characteristics peculiar to the working out of trade unionism. And again it may be, as Mr. Holsman remarks, that "the farsighted, patriotic, cultured citizens of high integrity of character enjoy work well done and would build the best buildings; but citizens of that character abhor connivance in monopolistic price fixing or curtailment of skill or productivity." It may be so. But it may also be that this attitude toward trade unionism and that attitude toward" farsighted, public spirited citizens" is merely a manner of expressing one's preferences or one's preconceptions. This also may be so.

But the world of reality most certainly reveals no such clean cut division of opinion or attitude between its citizens. In view of what is set forth daily in the financial columns of our press and in our market journals concerning the market, loan credits, tariffs, money rates, prices of commodities, and what our farsighted, public spirited citizens are doing in their own behalf, it seems very much like a denial of the facts to assert that these same citizens abhor connivance in monopolistic price fixing or curtailment of output.

In recent years laborers have developed a certain outlook toward the work which they do and toward those who employ them. And employers at the same time have acquired a certain outlook toward their work and toward those whom they employ. In broad outlines, the outlook of both toward the work which they do exhibits the same characteristic features. Both laborer and employer are guided by the rules of business traffic in that in both cases the matter of price rules over all other considerations. The goal of endeavor is higher prices; and the most certain way toward this end is the control of supply or the restriction of output.

The control of supply or the restriction of output is not a matter which falls within the field of choice or of voluntary action. Under the price system restriction of output is ordinarily a matter of necessity among those who have goods or services to dispose of. It is true, as the present case of the Western World indicates, that the necessity of restricting output in order to sustain prices may work out to the detriment of the common welfare; it may mean shortage, hardship, famine, or war. But under the price system there is no help for it.

But in the case of such procedure as reported by Mr. Holsman the matter is never so viewed. The question is approached under the assumption that one group—the trade unionists, go about their affairs under guidance of a predatory outlook, while the rest, the farsighted public citizens, go to their work in the interest of the common welfare. Which, of course, is to leave entirely on one side the all important factor which is that under the present institutional scheme, a shortage of labor or a shortage of goods is highly advantageous to those who have labor or goods to sell at a price.

But there is more to this matter than the restriction of output enforced upon labor and producers alike by the price system. Men no longer look upon the matter of living as a condition which turns upon materially productive work. Ownership—a vested interest, is viewed as that which will exempt men from engaging in the act of producing what they consume. Maintaining this condition of exemption from industrial employment is conceived by the farsighted, public spirited citizens as the first function of the state. To this end are most of our laws framed; and within the little world of farsighted citizens the right to live without working—the right to live upon a vested interest is never questioned. It is the foundation of all things.

But the advantages of vested interests to those who hold them are to be clearly seen by those who do not. And the right to live without working is a right which may be aspired to by anyone.

So that it should not occasion surprise to find that the workman, he who is supposed to look after the materially productive work which must needs be done, is giving heed to what is going on. It should occasion no surprise to find him engaged in laying plans looking toward creating a vested interest in his job—and in making it secure. And I think that among other things, this is what he is doing.

Now of course he may be all wrong about the matter. It may be that a vested interest in a job may be substituted for materially productive work; but I doubt it. No doubt he has been misled—but again, what has misled him?

He is certainly going about his affairs in a very business-like manner, doing all that he can to render secure his vested interest. He also may develop his vested interest that he may live without engaging in materially productive work—who knows?

It looks as if he had come to his present ways by following in the footstep of his betters. So that it is not merely a question as to what has misled the workman. I think that it is a case of finding out what has misled our farsighted, patriotic, cultured citizens of high integrity who have got Western civilization into its present mess.

FREDERICK LEE ACKERMAN.

The Fee-Plus-Cost System

SIR:

The technical press has recently been very active in comment upon the architect's alleged deficiencies in business methods. As far as these deficiencies refer to the carrying out of his work and his attention to his clients' interest, I think they are 99% unwarranted and the result of propaganda by building managers, contractors and others who wish to assimilate his profession.

But as far as the architects' own affairs are concerned, if the discussions in THE JOURNAL are any criterion, he certainly should have a guardian appointed to look after him.

We have no sooner got the 6% basis generally and universally accepted than we are confronted with a proposal to have the architect placed upon a salary basis. Had this proposal emanated from the building manager or the contractor, probably we need not have been surprised, but coming from the architectural profession itself, it is simply asinine.

Supposing the system were to be universally adopted, how long would it be before every client would be butting into the methods of the office, the number of men employed on his job, the wages paid them and the time expended? How long would it take him to say "your salary is too high, I can get lots of men to work for less?" The only result of this method—and that would be a very speedy one—would

be to eliminate all respect the public has for our profession and place us on a par with the janitor from the building manager's point of view, or the time-clerk from the contractor's.

While I have no desire to place our profession in a mercenary light, still the outward and visible sign of success in the business world is money, and unless we place our profession in a position where architects can make money, we will merely sink to the position of head draftsman in some organization for the construction of buildings and that organization will finance, plan, construct and dispose of the product of its skill.

Yours very truly,

JOHN GRAHAM.

NOTE: Members of the Institute will recall A. I. A. Document, Series A, No. 129 (it appears in the "Handbook" as Appendix P), in which the Institute offers the Fee-Plus-Cost System of charging for professional charges for consideration and use whenever desired. Mr. Kohn and Mr. Sturgis, who use a modified form of the document in question, have reported their experience in THE JOURNAL.—*Editor.*

From Our Book Shelf

On Building Churches

The Judson Press of Philadelphia has recently issued another of its series of Training Manuals called "Planning Church Buildings" by Henry Edward Tralle, M. A. It is intended as a guide and instruction book for those who in our protestant churches may be called upon to take part in the planning and erection of churches and church schools in connection with them. Dr. Tralle has given many years of study and practical service to the solution of these problems, and this little book embodies the wisdom gathered in cooperating with architects and building committees in all parts of the country.

In presenting this he has had the assistance and professional help of a trained architect, Mrs. George Ernest Merrill, who is Architect Secretary of the Department of Architecture recently established by the Baptist denomination whose headquarters are in New York City.

The author presents the requirements for churches of varying sizes, to illustrate certain solutions of these problems and certain important rules which should govern the planning and development of the program. The advise given is sane and practical. It does not assume to supplant the architect, but to educate the committee to a point where it can intelligently place its problem before the architect with some definite knowledge of what it ought to have, and thus simplify the problem for both parties. Even the skilled architect may find here a mass of information and data which will help him materially in his work.

The plans are well drawn, illustrate the text and suggest appropriate solutions which can not fail to be helpful, while not attempting to dictate as to the style or type of building to be used in any particular case.

The Chapter (X) on the Architect as artist by Joseph Hudnut, A. I. A., is full of sound reasoning for the professional man; while Mr. Merrill's contribution on Standards, a check list for committees and architects, fills a real need and is a practical glossary and specification.

Not all its items will be wanted in any individual case, but a perusal of the list will prevent omissions inconvenient to be without and expensive to add to the completed structure.

H. H. KENDALL.

News Notes

MR. WILLIAM J. DILTHEY announces removal from 1 Union Square West to 120 Liberty St., New York City.

MR. JOHN T. COMES, Renshaw Building, Pittsburgh, announces the formation of a partnership with two of his former associates, Messrs. Will R. Perry and Leo A. McMullen, under the firm name of Comes, Perry & McMullen.

THE next conference of the International Garden Cities and Town Planning will be held in London on 14, 15, 16 March next. A special exhibit of town planning schemes is being arranged. On 16 March the delegates will be entertained at the new garden city of Welwyn.

THE Philadelphia Chapter has held a number of meetings devoted to a discussion of the work of the Congress of the Building Industry, and the Executive Committee now has under consideration the question of leading in the formation of a local Congress similar to those already established in New York and Boston.

COMMENTING on the recent change in the Landis Awards in Chicago, in respect to some trades, Mr. Henry K. Holsman writes us as follows:

"The machinery movers' new working rules contained none of the wasteful rules formerly insisted upon and the wage was increased from 85 cents an hour to 92½ cents an hour. The marble setters changed their rules—permitting employers to work on their jobs. Their agreement also contains a clause guaranteeing the quality of workmanship, to the effect that if the workmanship is not up to standard in the judgment of the employer, the journeyman will take down and re-set the marble at his own expense, subject to appeal to the Arbitration Board, consisting of an equal number of employers and employees, whose decision shall be final and binding. The wage was raised from 87½ cents an hour to 97½ cents an hour.

"This last clause, guaranteeing workmanship, as nearly as I can make it out, estimating from a calculation of the difference between the wage award of Sept. 7th and the usual standard differential for wages of this trade, less 12½ per cent, amounts to about 2½ cents an hour for this guarantee clause. This is only an estimate, however, and not a positive statement of what may have been allowed by the arbiter for this clause.

"I may say further that it appears that only two trades have such a clause in their working agreements. Manifestly a trade union that will insist upon a rule guaranteeing the workmanship of its members to be first-class deserves a higher wage for its members than it would otherwise be entitled to."

Structural Service Department

SULLIVAN W. JONES, *Associate Editor*
LEROY E. KERN, *Assistant*

In connection with the work of the Committee on Structural Service of the American Institute of Architects and in collaboration with other professional societies and organized bodies having the same objective—improvement in building materials and methods and better shelter for humanity in all its manifold vocations and avocations.

Committee Activities

More Information on Conduit in Cinders. (31b1.)—In the November, 1921, issue of THE JOURNAL (S. S. D.) there was published the report of a special committee of the Electrical Committee appointed to survey national experience with electrical conduit placed in cinder fill and cinder concrete. The publication of that report has been helpful in that it has precipitated discussion and brought to light additional information. The report referred to seemed to indicate that experience with conduit, no matter how treated, embedded in cinders was unsatisfactory. The following letter from Mr. Bassett Jones of Meyer, Strong & Jones, Inc., consulting engineers, apparently establish the fact that conduit can be and has been so manufactured as to give satisfactory service under conditions which are destructive of the ordinary commercial conduit.

"Some few years ago the writer gave a great deal of attention to the question of conduit in cinder fill, carrying on extensive and careful chemical and physical tests, both in the laboratory and on the building site for the purpose of determining what sort of protective coating could be applied to steel pipe that would protect it from the action of the sulphurous acid set free by dampness in the cinders.

These tests originated in the discovery that practically every form of rust protection applied to conduits then on the market disintegrated very rapidly in cinder fill. We had records of numerous cases where the conduit had been completely destroyed in a comparatively short time. An investigation of the old Manhattan Trust Company building, at the corner of Wall and Nassau Streets in New York, at the time of its destruction, as well as an investigation of the old Pabst Building which stood on the site of the present Times Building, together with numerous other cases showed one interesting fact, that all hot galvanized pipe that had lain in the fill had remained intact, and the writer then suggested to conduit manufacturers that a hot galvanized protection be used on electrical conduit.

This however did not seem to quite fill the bill as at the time a large amount of electro-galvanized conduit was being placed upon the market. The writer therefore undertook to carry out experiments and tests to find out whether or not electro-galvanizing could be applied to conduit in such a manner that it would not disintegrate when buried in cinder fill.

Much work was done on this phase of the subject and eventually we discovered by a series of long tests in buildings under construction that if electro-galvanized conduit was used in which the galvanizing would meet the standard American T & T four dip test for hot galvanizing, that such conduit resisted the effect of the cinder fill equally as well as the hot galvanized pipe.

It was found that in order to make the electro-galvanized conduit meet the above mentioned test that it was necessary to leave the conduit in the electro-galvanizing bath for an additional period of time, generally about half an hour, and that when this was done the conduit met the test and stood up under job conditions when buried in cinder fill. Such conduit has been taken out of the cinder fill by the writer for various periods after its installation up to 10 years, and it has proved in every case to be practically as good at the end of 10 years as it was the day it was installed.

At these tests samples of practically every make of conduit on the market were used under actual building conditions and with the exception of the conduit meeting the four dip test the results when the building was completed, was a collection of badly rusted pipes.

This office has therefore made it a practice for a number of years to specify that all electro-galvanized or hot galvanized conduit shall meet the standard American T & T four dip test for hot galvanizing, and the difficulty brought about by the corrosion of conduit by the sulphurous acid in the cinder fill on the writer's installations according to these specifications, has ceased.

The standard American T & T four dip test for hot galvanizing is a simple test to carry out and for the benefit of your magazine we are attaching a copy of this test as embodied in our specifications. Originally we made the tests ourselves, but for some years past, have had them made by a laboratory of good standing.

Our experience shows that a considerable portion of the damage caused by corrosion is due to the mechanical abrasion of the conduit before the cinder fill is laid. The conduits are laid on the floor slabs and walked over by workmen, building material is dumped upon them from wheel barrows, wheel barrows are wheeled over them and the pipe thus receives probably as hard treatment as it is possible to give it without crushing the pipe. Indeed, in some cases we have found pipe crushed due to this cause.

I mention this because there is no question in our minds that the best rust protection for conduit is acid proof enameling, black or otherwise, but actual measurements at buildings have shown that in many cases at least one third of the enameling has been removed from the pipe by mechanical abrasion before the fill is placed. This left one-third of the bare steel open to the immediate attack of the acids in the water used in the fill.

I should draw your attention to the fact that the American T & T four dip test for hot galvanizing which is applicable as mentioned above to electro-galvanizing does not apply to Sherardized products, for the zinc applied by the Sherardizing process is mixed with iron particles which prevent the test from operating properly. The amount of zinc deposited per unit of area by the Sherardizing process may vary considerably in any given piece of pipe unless the Sherardizing process is carried out with extreme care. We found this difficulty to exist when Sherardized products first came on the market, and volumetric analyses of the zinc so deposited showed variations of 1 to 12 in weight of zinc per unit of area. This difficulty we believe, has been largely, if not entirely eliminated by changes in the Sherardizing process.

The only known suitable test for the protective value of the Sherardized coating is the salt spray test which must be carefully carried out and is not easy to use, but such tests as well as other chemical and physical tests of Sherardized products indicate that this form of protection, if the Sherardizing is properly executed and the coating contains at least 200 milligrams of zinc per sq. inch of surface, is equally as good as that required in the cases of electro-galvanizing or hot galvanizing by the Standard American T & T four dip test.

My experience has led me to believe that the deleterious action of the cinders ceases after a reasonable time unless of course water is more or less continuously added to them. In other words, the action of the cinders on the conduit exists only during the time the cinders retain their moisture. If there is enough zinc deposited on the pipe so that the amount removed by the action of the sulphurous acid in the moisture contained in the cinders can not remove all of the zinc before the cinders have become dry, the pipe will remain intact indefinitely. It is of course probable

that if through leakage of other pipes the cinders remain moist no matter how much zinc is applied to the pipe it will eventually become corroded.

It may be of intest to add that in tropical climates where the air is more or less charged with sulphurated hydrogen from decaying vegetation, the zinc, even on hot-galvanized pipe is disintegrated with extreme rapidity by the air alone. In this case, the only resource is to paint the pipe with asphaltum as soon as it is received. At Panama the hot galvanizing on pipe kept under a shed disintegrated to a white powder in ten days. Other forms of galvanizing, except high grade Sherardizing, disintegrated with greater rapidity.

To sum up I might say that provided the proper amount of zinc per unit of area is properly applied to the pipe, either by the electro galvanizing process, the hot dip process, or Sherardizing process, the pipe will not be corroded in any reasonable length of time in cinder fill, unless the fill remains damp.

I am a little surprised that the report of the N. F. P. A. Electrical Committee did not mention these facts, as the conduit manufacturers are thoroughly familiar with them."

Tests for electro-galvanizing or hot galvanizing. The galvanizing shall be applied in a smooth heavy uniform coating of pure zinc, and shall stand the following tests, all samples being taken from stock or from the job.

The samples shall be cleaned before testing, first with carbona, benzine or turpentine, and cotton waste (not with a brush) and then thoroughly rinsed in clean water and wiped dry with clean cotton waste. The samples shall be clean and dry before each immersion in the solution. All samples tested for galvanizing shall be free from enamel or other coating. (Note: Enameling can be removed by immersing the samples in carbon bi-sulphide. The enameling can then be wiped off.)

The standard solution of copper sulphate shall consist of commercial copper sulphate crystals dissolved in cold water, about in the proportion of 36 parts, by weight, of crystals to 100 parts, by weight, of water. The solution shall be neutralized by the addition of an excess of chemically pure cupric oxide (Cu O). The presence of an excess of cupric oxide will be shown by the sediment of this reagent at the bottom of the containing vessel.

The neutralized solution shall be filtered before using by passing through filter paper. The filtered solution shall have a specific gravity of 1.186 at 65 deg. F. (reading the scale at the level of the solution) at the beginning of each test. In case the filtered solution is high in specific gravity, clean water shall be added to reduce the specific gravity to 1.186 at 65 deg. F. In case the filtered solution is low in specific gravity, filtered solution of a higher specific gravity shall be added to make the specific gravity 1.186 at 65 deg. F.

As soon as the stronger solution is taken from the vessel containing the unfiltered neutralized stock solution, additional crystals and water must be added to the stock solution. An excess of cupric oxide shall always be kept in the unfiltered stock solution.

Samples shall be tested in a glass jar of at least four inches inside diameter. The jar without the samples shall be filled with standard solution to a depth of at least four inches. Box samples (out-let boxes, etc.) shall be tested in a glass or earthenware jar containing at least one quart of standard solution for each sample.

Solution shall not be used for more than one series of four immersions.

Clean and dry samples shall be immersed in the required quantity of standard solution in accordance with the following cycle of immersions.

First—Immerse for one minute, wash and wipe dry.
Second—Immerse for one minute, wash and wipe dry.
Third—Immerse for one minute, wash and wipe dry.
Fourth—Immerse for one minute, wash and wipe dry.

After each immersion the samples shall be immediately washed in clean water having a temperature between 62 deg. and 68 deg. F. and wiped dry with cotton waste.

If after the test described there should be a bright metallic copper deposit upon the samples, the lot represented by the samples shall be rejected.

Joint Conference on Advertising. *Meeting of Executive Committee.*—The Executive Committee of 5 of the Continuing Committee of 30 created by the November, 1921, Indianapolis Joint Conference on Better Advertising to Architects met in New York on December 16th.

The Committee made a careful study of the personnel of the Continuing Committee with respect to interests represented and it was found that many important groups had no spokesmen on the Continuing Committee. The feeling was that the Continuing Committee should be enlarged to provide for representation from those interests not now represented. A list was prepared and the chairman was authorized to invite the various manufacturers' associations to designate representatives. Certain leading companies in unorganized industries will be asked to agree among themselves upon suitable representation.

The cost of publishing and distributing the proceedings of the Indianapolis Conference was closely approximated, and it was agreed that a charge of $1.00 per copy should be made. The suggestion that the Press of the A. I. A. Inc., publish the proceedings was adopted.

Further consideration of the recommendations made by the Indianapolis Conference in regard to standard sizes, character of advertising copy, and segregation of subject matter was postponed until the Continuing Committee is enlarged and reorganized.

It was felt that the work with which the Committee was charged by the Indianapolis Conference should be more finally divided and assigned to a larger number of sub-committees than now exist.

The chairman was authorized to discuss with a specified list of manufacturers the production of filing equipment, after the standard classification has been so revised as to embody any valuable features that might be turned up by answers to the questionnaire sent to a select list of 150 architects.

Standardization of Size of Paving Brick. (3g4).—The Institute, through the Structural Service Committee, was represented at the conference held in Washington, November 15th, under the auspices of the U. S. Department of Commerce to consider the standardization of size of paving brick. In attendance at the conference were representatives of various paving brick manufacturers, the National Paving Brick Manufacturers' Association, the Bureau of Standards, the A. S. T. M., Department of Public Roads, the Army and Navy, and representative engineering societies interested in the use of paving brick.

A report, submitted by the National Paving Brick Manufacturers' Association, indicated that during the past eight years paving brick of 66 varieties had been manufactured in commercial quantities in this country. After a general discussion and expression of opinion on the practicability of eliminating a large number of these varieties a committee was appointed to consider the various recommendations and suggestions made and to report at the afternoon session.

This committee recommended that the following sizes of paving brick be regarded as standard and after a detailed discussion of the various recommendations, the report of the committee was unanimously adopted:

Plain wire-cut brick (vert. fib. lugless) 3" x 4" x 8½" and 3½" x 4" x 8½"; repressed lug brick 3½" x 3½" x 8½" and 4" x 3½" x 8½"; vertical fiber lug brick 3" x 4" x 8½" and 3½" x 4" 8½"; wire-cut lug brick (Dunn patent) 3" x 3½" x 8½", 3½" x 3½" x 8½" and 4" x 3½" x 8½"; hillside brick (Dunn patent) 4" x 3½" x 8½"; hillside brick (repressed) 4" x 3½" x 8½"

In each instance the first dimension given is the vertical dimension of the brick as laid.

Abstracts

It is the purpose of the Structural Service Committee and THE JOURNAL *jointly to give in this division each month, brief abstracts of all publications by the Government Departments and Bureaus, University and other research laboratories, States and Associations, which contain fresh information in regard to materials or methods employed in construction and thus afford architects and others a convenient means of keeping themselves conversant with rapidly expanding knowledge in the technique of construction.*

Asbestos. (30c3).—(*University of Arizona. Mineral Technology Series No. 24. Bulletin No. 24. "Asbestos" by M. A. Allen and G. M. Butler. Pages 31, Size 6" x 9".*) Among the more important substances included under the general trade name of asbestos are chrysotile (serpentine asbestos), amphibole, anthophylite, crocidolite, and amosite. Chrysotile asbestos is the only variety that is known to occur in commercially important deposits in Arizona; in its production, Arizona leads all the other states. An important difference between the chemical composition of Arizona chrysotile asbestos and that of the Canadian chrysotile is the small quantity of iron oxide the former contains. On account of this small quantity of iron oxide (about one half that carried by the Canadian variety) it has been suggested that Arizona asbestos might be the better variety to use for electric insulation.

Grades and Specifications.—There is no standard classification of asbestos in general use in Canada, but the Department of Mines of the Province of Quebec recognizes the following five grades:

	Approximate Length of Fiber.	*Commercial Name.*
Crude No. 1	Over 3/4 of an inch	Crude No. 1
Crude No. 2	5/16 to 3/4 of an inch	Crude No. 2
Mill Stock No. 1	5/16 of an inch and over	Spinning fiber
Mill Stock No. 2	1/32 to 5/16 of an inch	Shingle fiber
Mill Stock No. 3	Up to 1/32 of an inch	Paper stock and others
Asbestic	Very short fibers mixed with powdered serpentine	Asbestos for wall plaster

Different producers, however, follow different practices, and separate their products into grades of different fiber lengths, so that the above table is not absolute, but should serve as a guide. While the length of the fibers is a very important factor in determining the grade and market price of asbestos, the value is also dependent upon the fineness of the fibers, the temperature at which they fuse, their flexibility, and their tensile strength.

Uses.—The fibrous structure, toughness, incombustibility, and low heat conductivity are the properties that make asbestos valuable. The most important way in which asbestos is utilized is as yarn or thread used in the manufacture of many types of steam packing, fireproof cloth, rope, and brake linings. No known substance can be satisfactorily substituted for asbestos in the manufacture of better qualities of these articles, and only the highest grades of Nos. 1 and 2 Crude can be used for such purposes. Material consisting of shorter or less flexible fibers is used very extensively in the manufacture of insulating material to cover steam pipes, boilers, etc.; asbestos paper and millboard for high pressure gaskets and packings; stove linings; air-cell pipe coverings; shingles and other roofing material; wall plaster; "Bitulithic" paving; "85% magnesia;" acid- and corrosive-proof pipe, wall tile, and desk coverings; filters; asbestos paint, etc. Large quantities of such asbestos is also used in refrigeration and cold storage plants.

Demand and Market Value.—Only a small proportion of the asbestos mined in most places is of high grade—the materials chiefly sought and most widely used. In attempting to meet the demand for the higher grades, an over-supply of low grade asbestos is produced. This fact explains the striking difference in value of the various grades prevailing F. O. B. Canadian mines, February 26, 1921, which, according to the Engineering and Mining Journal, were:

Grade.	*Price Per Ton.*
Crude No. 1	$2,000 to $3,000
Crude No. 2	1,400 to 2,000
Spinning fiber	400 to 1,000
Magnesia and compressed sheet fiber	325 to 500
Shingle stock	110 to 150
Paper stock	60 to 75
Cement stock	17.50 to 30
Floats	8.50 to 15

Fire Stopping. (46). (*Structural Defects Influencing the Spread of Fire. National Fire Protection Association. Pages 18, size 6x9 inches. Illustrated.*) The suggestions and details, in this booklet, are designed primarily to cover defects in buildings of ordinary construction, but the same principles may be applied to like faults which are often found in fire resistive buildings. Precautionary measures are given for preventing the rapid spread of fire in connection with sheathing and plastering, boxed cornices, attics, stairways, elevators, floor and wall openings and skylights.

Creosoted Wood Silos. (35z5). (*Technical Note No. 144. Forest Products Laboratory.*) The wood-preservation studies at the Forest Products Laboratory have shown that the value of wooden silos can be greatly increased by proper treatment with coal-tar creosote. A good creosote treatment will not only increase the durability of the wood, but will reduce the tendency of the staves to shrink when the silo is empty. A creosoted silo can not be painted afterwards; however, it does not need painting, for the creosote protects the wood, and its color is pleasing.

Highly durable woods, such as heart cypress or redwood, do not need protection against decay so much as the non-durable woods, but a thorough creosote treatment will make the non-durable woods, such as sap pine, last longer than durable species will without treatment.

Contamination of the silage by creosote from the staves need not be feared. This is borne out by experiments and by careful inquiry among the many farmers who have used creosoted silos. In order to be quite sure, it is well to allow the creosoted staves or the finished silo to stand a few weeks before filling.

The most thorough creosote treatment can be given by pressure methods. If pressure-treated wood is not available, very good results can be obtained by the hot and cold bath treatment. If a good penetration of coal-tar creosote is obtained by either of these processes it is not too much to expect the silo staves to resist decay 25 or 30 years.

Other methods of creosoting, such as painting, spraying, or dipping can be used. They are less costly than the pressure treatment, but they are also less effective. They will probably add several years to the life of the silo and thus pay for themselves, but the more thorough treatments should be used wherever possible. Instructions for treating silo staves by these various processes may be obtained from the Forest Products Laboratory, Madison, Wisconsin.

Graphite. (25a).—(*"Graphite in 1920" by L. M. Beach. Reprint from Mineral Resources of the U. S. by the Geological Survey. Pages 6 Size 6" x 9".*) This publication gives tables of production of crystalline and amorphous graphite, manufactured graphite, imports and exports and prices.

Copper. (15b)—("*Copper in 1919.*" *General Report by H. A. C. Jenison. Reprint from Mineral Resources of the U. S. by the Geological Survey. Pages 123. Size 6" x 9".*) This publication gives tables and data on production, imports, exports, consumption, and prices of copper. It does not discuss the physical properties of copper nor its technical uses.

Index

Structural Service Department from January 1919 to December 1921, inclusive.

(3) **Masonry Materials.** Thermal Conductivity of Burned Clay, Concrete, Gypsum, Lime Mortar, and Radix, May 1920—Sand and Gravel, Nov. 1921.

(3a) *Cement.*—Storage of Cement, Sept. 1920—*Portland Cement.*—Effect of Fineness, Aug. 1920—Tests of Aged Cements in Concrete Mixtures, Dec. 1920—Uniform Spec. for Portland Cement, July, 1921.

(3b) *Integral Compounds and Concrete Floor Treatments.*—Calcium Chloride and Vitriflux, June 1920—Hardening and Dustproofing Cement Floors, Feb. 1921.

(3c) *Lime.*—Lime, Its Manufacture and Properties, Dec. 1920—Tentative Spec. for Masons' Hydrated Lime, July 1921.

(3e4) *Slag.*—Crushed Slag Aggregate for Concrete, Sept. 1920.

(3g) *Brick.*—Building Brick, Manufacture and Properties, May 1920—Spec. for Building Brick, July 1921. Face Brick, May1920—Sand Lime Brick, Nov. 1921—Spec. for Paving Brick, May 1920—Porosity and Volume Changes of Clay Fire Brick at Furnace Temperatures, Aug. 1920.

(3h) *Gypsum.*—Gypsum, May 1921—Gypsum in 1920, Dec. 1921.

(3m) *Mortar.*—Plasticity of Mortars and Plasters, Jan. 1921—Non-Staining Mortar for Pointing, Setting, and Backing, Sept. 1920.

(4) **Concrete and Concrete Work.** Reinforced Concrete, May 1920—Standardization of Reinforcing Steel, Aug. 1920—Placing Concrete, Mar. 1921—Permeability of Stone and Concrete, Nov. 1920.

(5) **Brickwork.** Spec. for Common Brickwork, May 1920—Common Brick, Estimating and Construction, May 1920.

(7) **Waterproofing and Dampproofing.**—Colorless Waterproofing Materials, Nov. 1921.

(8) **Stone Work.**—Report of the Investigation of the Lincoln Memorial at Washington, July 1920. Weathering of Limestone, May 1920—Artificial Stone, Nov. 1921.

(9) **Architectural Terra Cotta.**—A New Departure in Standard Specifications, Apr. 1921.

(11) **Paving.**—Concrete Floors, Feb. 1919.

(12) **Roofing Sheet Metal and Skylights.**—Prepared Roofings, June, Aug., Oct. 1919.

(13) **Structural Steel and Iron.**—Welded Steel Connections, July 1921.

(14) **Miss. and Ornamental Metal Work.**—Monel Metal, Nov. 1920—Physical Properties of Materials, July 1921—Hardened Copper, Aug. 1921—Seven Centuries of Brass Making, Dec. 1920.

(19) **Carpentry.**—Wood Used in House Construction, May 1921—Fence Posts, July 1921.

(19a) *Lumber.*—Physical Properties of Woods, Mar. 1921—Identification of Woods, Nov. 1920—How to Distinguish Longleaf from Shortleaf Pine, Aug. 1921—How to Tell Birch, Beech, and Maple Apart, Dec. 1920—How to Distinguish Mahogany and Walnut from Red Gum, Nov. 1920—Identification of Oak Woods, July 1921—"Virgin Growth" and Second Growth Timber, Nov. 1921—Comparative Value of Timber Cut from Live and Dead Trees, Dec. 1920—Charring Does not Preserve Wood, Dec. 1920—Saving Mine Timbers from Decay, Dec. 1920—Color of Cypress No Indication of Durability, Dec. 1920—Strength of Southern Pine and Douglas Fir, Apr. 1921—Strength of Built-up Southern Pine Timbers, Nov. 1921—American Walnut, Nov. 1920—Lumber Value of Trees not Affected by Turpentining, Nov. 1921. *Classification*—Lumber Standards and Classification Feb. 1920. *Rot Prevention.*—Dry Rot, Sept. 1920—Difference between Moulds and Wood Destroyers, Nov. 1921. *Fire-Proofing.*—Making Wood Fire Resistant with Paint, Sept. 1920.

(19e6) *Veneering and Plywood.*—Plywood Panels, Jan. 1921—Glues and Glued Joints, Feb. 1921.

(19e9) *Flooring.*—Wood Floors, Feb., Mar. 1919.

(19g) *Building and Sheathing Papers, Felts and Quilts.*—Sound Deadening of Floors, Jan. 1920—Insulation of Buildings from Heat and Cold, July 1921.

(191) *Combination Sheathing and Lath.*—Bishopric Sheathing and the Omaha Tests, Feb. 1921.

(21) **Plastering.**—Effect of Salt Air on Plaster, Sept. 1921—Spec. for Scagliola, Sept. 1921—Stucco Designs in the Small House Competition, June 1921—Portland Cement Stucco, Apr. 1921—Scraffito, Feb. 1921.

(22) **Marble and Slate.**—Marble, Nov. 1921—Structural Slate, Sept. 1920.

(23) **Tile and Tile Substitutes.**—Tile, Composite, Elastic, Mar. 1919—Tiles, June 1921.

(24) **Plastic Floors.**—Magnesium Oxy-Chloride, Mar. 1919—Mastic, Mar. 1919.

(25) **Painting and Finishing.**—Spec. for White and Tinted Paints on a White Base, Nov. 1920—Spec. for Red Lead Paint, Nov. 1920—Spec. for Green Paint, Apr. 1921—Spec. for Ocher, Nov. 1920—Spec. for Liquid Paint Dryer, Apr. 1921—Spec. for Iron Oxide and Iron Hydroxide Paint, Nov. 1920—Spec. for Asphalt Varnish, Apr. 1921—Spec. for Black Paint, Nov. 1920—Spec. for Composite Thinner, Apr. 1921—Spec. for Volatile Mineral Spirits for Thinning Paints, Nov. 1920—Spec. for Spar Varnish, Apr. 1921—Turpentine, Mar. 1921—The White Lead Question, Aug. 1921.

(27) **Hardware.**—Nails and Nailing, July 1921.

(28) **Furnishings.**—Canvas, June 1921.

(29) **Plumbing.**—Community Tile Drainage, Nov. 1921—Flow of Water in Drain Tile, Dec. 1920—Sterilization of Water, Mar. 1921—Spec. for Fire Hose, Dec. 1921.

(30) **Heating and Ventilating.**—Pipeless Furnaces, June 1921—Insulation of Warm Air Pipes and Ducts, Dec. 1920—Temperature and Humidity, Aug. 1921—Automatic Control of Humidity in Shops, Nov. 1921.

(31) **Electrical Work.**—Lighting of Buildings, Apr., May, June, 1919—Conduit in Cinders, Nov. 1921.

(32) **Refrigeration.**—Refrigeration Machines, Apr. 1921—Balsa Wood, Sept. 1921.

(33) **Elevators.**—Standardizing Elevators, Jan., Sept. 1921.

(35) **Equipment Stationary.**—Failure of Vault-light Glass in Bottom of Swimming Pool, Oct. 1919—Swimming Pools, Jan. 1921—Concrete Vats for Tanneries, Dec. 1920—Motoramps, Dec. 1920—Community Buildings, Feb., July 1921.

(38) **Landscape.**—Landscape Design, Jan. 1921—Lawns, May 1921.

(39) **Accoustics.**—Sound Transmission of Solid Plaster and Gypsum Block Partitions, Nov. 1920—Metal Lath and Tests at the Univ. of Ill. Feb. 1921.

Miscellaneous.—Nomenclature for Welded Pipe, Mar. 1921—Measurement of Reflection Factors, Mar. 1921—Conference on Advertising Literature, Dec. 1921—Standards (A. E. S. C.) Dec. 1921—Standards (A. S. T. M.) Dec. 1921.